SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS DOCUMENT MAY BE ILLEGIBLE DUE TO BAD SOURCE DOCUMENTS.



U.S. Environmental Protection Agency

Round 1 Long Term Groundwater Monitoring Report

Spickler Landfill Site Spencer, Wisconsin

August 5, 1996



August 5, 1996

United States Environmental Protection Agency Region V 77 West Jackson Blvd. Chicago, IL 60604

Attn: Mr. John Fagiolo

Remedial Project Manager

Re: Round 1 Long Term Groundwater Monitoring Report for the Spickler Landfill Site -- STS Project No. 84374XA

Dear Mr. Fagiolo:

On behalf of the Settling Defendants for the Spickler Landfill Site in Spencer, Wisconsin, STS Consultants, Ltd. (STS) is submitting the results of Round 1 of the Long Term Groundwater Monitoring. Round 1 of the Long Term Groundwater Monitoring was completed in accordance with the O&M Plan and QAPP. One copy of the complete data set has been provided under separate cover to the U.S. EPA.

As part of the long term monitoring program, wells S1A, S2A and S3A have been replaced at the same depths with S1AR, S2AR and S3AR. One overlapping round of groundwater quality data has been collected in both the older and replacement wells to ensure comparability of data trends as requested. Based on the data collected, we are formally requesting approval to abandon older wells S1A, S2A and S3A, since they are out of compliance with current State well installation regulations.

Respectfully submitted,

STS CONSULTANTS, LTD

Yane A. Kettler

Jane a. Kettle

Project Chemist

Jeanne M. Tarvin, P.G., CPG

Principal Hydrogeologist

Attachments

©STS Consultants, Ltd., August 1996

cc: See Distribution List

STS Consultants Ltd. Consulting Engineers

11425 West Lake Park Drive Milwaukee, Wisconsin 53224 414.359.3030/Fax 414.359.0822



DISTRIBUTION LIST

Mr. Larry Lester - WDNR

Ms. Jane Lemcke - WDNR

Mr. Henry Nehls-Lowe - Wisconsin Division of Public Health

Mr. James P. Odendahl - Weyerhaeuser Company

Mr. Mark Johnson - Weyerhaeuser Company

Mr. Dale E. Webster - BASF

Mr. Christopher Miastros - Bata Shoe Company, Inc.

Mr. Mark Thimke - Foley & Lardner

Mr. James P. Lonsdorf & Andraski

Ms. Nancy Peterson - Quarles & Brady

Ms. Jeanne M. Tarvin - STS Consultants, Ltd.

Ms. Jane A. Kettler - STS Consultants, Ltd.

Re	n	ort
110	\sim	,,,

PROJECT

LONG TERM GROUNDWATER MONITORING, ROUND 1 MARCH, 1996 SPICKLER LANDFILL SITE

CLIENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604

Project No. 84374XA

Date AUGUST 5, 1996



STS Consultants, Ltd.
Consulting Engineers
11425 West Lake Park Drive
Milwaukee, Wisconsin 53224
414.359.3030/Fax 413.359.0822

TABLE OF CONTENTS

TABLE OF CONTENTS	
Pag	e No.
1.0 INTRODUCTION	. 1
2.0 FIELD SAMPLING PROCEDURES	. 2
2.1 Sample Collection	
2.2 Sample Transportation	
2.3 Field and Laboratory Analytical Procedures	
2.3.1 Field Analyses	
2.3.2 Laboratory Analyses	
3.0 RESULTS OF FIELD AND LABORATORY ANALYTICAL DATA	.4
3.1 Results of Field Analytical Data	. 4
3.1.1 Monitoring Wells	. 4
3.1.2 Residential Wells	. 4
3.2 Results of Laboratory Analytical Data	. 5
3.2.1 Monitoring Wells	. 5
3.2.2 Residential Wells	
3.3 Conclusions	. 7
3.4 Recommendations	.9
4.0 QUALITY ASSURANCE REVIEW OF ANALYTICAL DATA	10
4.1 Field Data	10
4.2 Laboratory Data	10
4.2.1 Sample Handling and Analytical Methods	10
4.2.2 Blanks	11
4.2.3 Surrogate and Matrix Spike Recoveries	11
4.2.4 Quality Assurance Summary	12
FIGURES	
Figure 1 - Site Location Diagram	
Figure 2 - Long-Term Monitoring Well Location Diagram	
Figure 3 - Groundwater Table Contour Map	
Figure 4 - Piezometric Head Distribution	

TABLE OF CONTENTS (cont.)

TABLES

- Table 1 Groundwater Elevation Summary
- Table 2A -Field Parameters, Groundwater Monitoring Wells
- Table 2B Field Parameters, Residential Wells
- Table 3A -Metal and Cyanide Concentrations, Groundwater Monitoring Wells
- Table 3B Metal and Cyanide Concentrations, Residential Wells
- Table 4A Volatile Organic Compound Concentrations, Groundwater Monitoring Wells
- Table 4B Volatile Organic Compound Concentrations, Residential Wells
- Table 5A -Phthalate Concentrations, Groundwater Monitoring Wells
- Table 5B Phthalate Concentrations, Residential Wells

APPENDICES

Appendix A - Field Sampling Sheets

Appendix B - Chain-of-Custody Forms

Appendix C - HES Case Narrative

LONG TERM GROUNDWATER MONITORING ROUND 1 SPICKLER LANDFILL SITE MARCH, 1996

1.0 INTRODUCTION

On behalf of the Settling Defendants, STS Consultants, Ltd. (STS) has completed Round 1 of the Long Term Groundwater Monitoring for the Spickler Landfill Site. The monitoring was completed from March 12, 1996 to March 22, 1996. The Spickler Landfill Site is located in the northwest quarter of the southeast quarter of Section 33, Township 26N, Range 2E, Marathon County, Wisconsin. Figure 1 presents a Site Location Diagram.

The Long Term Groundwater Monitoring (LTGWM) includes sampling and analysis of groundwater monitoring and residential wells. The LTGWM Program is detailed in the final LTGWM Plan dated November 3, 1995. Protocols for sampling, sample handling and storage, sample chain-of-custody, laboratory and field analyses, and data evaluation are specified in the Spickler LTGWM Quality Assurance Project Plan (QAPP) dated November 3, 1995.

The objective of the LTGWM is to monitor groundwater at the landfill and nearby residences in order to evaluate the effectiveness of the remedy and to detect deterioration in groundwater quality. Deterioration, if any, in groundwater quality will be assessed by comparison of the LTGWM results to data collected prior to the remedial action and to action levels specified in the Wisconsin Administrative Code (WAC).

This Technical Memorandum presents the results of Round 1 of the LTGWM. Summary data tables are attached as Tables 1 through 5, and a copy of the complete data package as received from the analytical laboratory has been submitted to the U.S. EPA under separate cover. The analytical laboratory, Hazleton Environmental Services (HES), qualified the data as specified in the analytical methods included in the QAPP. Upon review of the analytical data, STS further qualified some of the data points, including some which appeared to reflect post-sampling contamination. The data qualification procedures were performed in accordance with the "National Functional Guidelines for Organic Data Review" and the "National Functional Guidelines for Inorganic Data Review," both documents dated February 1994.

2.0 FIELD SAMPLING PROCEDURES

2.1 Sample Collection

Groundwater samples were collected in accordance with the LTGWM Plan and QAPP. Samples were collected, preserved, and transported in accordance with the procedures outlined in the QAPP. Copies of the field sampling sheets documenting sample collection and field activities are attached in Appendix A.

The following monitoring and residential wells were sampled:

Monitoring Wells: MW-6S, MW-6D, MW-7S, MW-7D, MW-10S, MW-11S, MW-

13S, MW-13D, MW-14S, MW-15S, MW-15D, MW-19S, MW-19D, MW-20S, MW-S1, MW-S1A, MW-S2, MW-S2A, MW-S3,

MW-S3A, MW-S1AR, MW-S2AR, MW-S3AR

Residential Wells: RW-2543, RW-2551

Monitoring wells MW-S1AR, MW-S2AR, and MW-S3AR were installed in March 1996 to replace wells MW-S1A, MW-S2A, and MW-S3A which do not conform to the current well construction requirements in NR141, WAC. One overlapping round of data was collected in both the older existing wells and the replacement wells to ensure correlation of long term trends in water quality for these well locations. Upon regulatory agency concurrence, older, existing wells MW-S1A, MW-S2A, and MW-S3A will be abandoned in accordance with NR141, WAC. Installation of MW-S1AR, MW-S2AR, and MW-S3AR was discussed further in correspondence from STS to the U.S. EPA dated February 15, 1996; March 7, 1996; March 15, 1996; and Progress Report No. 32, dated June 7, 1996. Figure 2 presents a diagram of the site layout showing the residences and monitoring well locations.

Prior to sample collection at monitoring well locations, the depth to water was measured in the functioning wells, including those not sampled as part of the LTGWM. Data for depth to groundwater was used to determine the volume of water to be purged from each well and to calculate the groundwater elevation at each well. Field sampling personnel attempted to purge each well of four well volumes, although some wells purged dry. The volume of water purged from each well prior to sampling is included on field sampling sheets in Appendix A.

Data on groundwater elevations were compiled and compared to previously collected data to determine the current hydrogeologic conditions at the site. Groundwater elevations observed over the previous one year period are shown in Table 2. A groundwater contour map is presented as Figure 3, where a piezometric head distribution contour map is presented as Figure 4 for the March 1996 sampling round.

2.2 Sample Transportation

Samples were sent to HES in Madison, Wisconsin for analytical testing in accordance with the QAPP. Samples were placed on ice in coolers as they were collected. Samples were shipped by overnight carrier to HES. Included with the samples were Chain-of-Custody forms which were completed as the samples were collected. Copies of the completed Chain-of-Custody forms are included in Appendix B.

2.3 Field and Laboratory Analytical Procedures

2.3.1 Field Analyses

Groundwater samples were analyzed in the field for the following parameters in accordance with procedures outlined in the QAPP:

- Temperature
- pH
- Conductivity

Measurements were made as soon as possible after sample collection. Measurements of temperature were used to convert conductivity measurements to specific conductance at 25°C. The results of these measurements are included in Tables 1A, 1B and 1C.

2.3.2 Laboratory Analyses

Groundwater samples were analyzed by HES for the following parameters:

- Volatile Organic Compounds (VOCs) (naphthalene plus those VOCs associated with the Superfund Analytical Method for low concentration water).
- Metals (arsenic, barium, chromium, iron, lead, manganese, mercury and cyanide).
- Phthalates (di-n-butyl phthalate, bis-2-ethyl hexyl phthalate, di-ethyl phthalate.

Laboratory analytical procedures are discussed in the QAPP.

3.0 RESULTS OF FIELD AND LABORATORY ANALYTICAL DATA

The results of the field and laboratory analytical data have been compiled into two categories: monitoring wells and residential wells. NR140, Wisconsin Administrative Code (WAC) standards will be used throughout the LTGWM to assess the quality of groundwater sampled from the monitoring wells and residential wells. Groundwater quality trends have been preliminarily evaluated by comparing the December 1993 sampling round to the March 1996 sampling round. A detailed analysis, however, will be performed after an additional round of data is collected. Site specific background water quality data is not available for comparison. Previous attempts by the settling defendents to obtain permission to install upgradient, background wells off-site have been unsuccessful.

3.1 Results of Field Analytical Data

3.1.1 Monitoring Wells

The field analytical data collected from the monitoring wells during Round 1 of the LTGWM are presented in Table 2A.

From the December 1993 to the March 1996 sampling round, seven wells had changes in pH which were greater than 0.5 units. At five of the seven wells, pH increased toward a more neutral pH. Well MW-13D had a pH increase of 1.2 units. Wells MW-11S and MW-S2A had decreases in pH. During the interim monitoring, pH at these and other wells had typically varied by less than 0.5 units from one sampling round to the next.

Changes of greater than 20% in conductivity were observed at 10 wells. In the cases of wells MW-6D, MW-7D, MW-13D, and MW-15D the change may be due to errors in recording the conductivity values in December, 1993 since the December 1993 readings were approximately one tenth of the September 1993 and March 1996 readings. Conductivity in the other 6 wells (MW-11S, MW-19S, MW-S1, MW-S2, MW-S2A, and MW-S3) has decreased over the course of the last 3 sampling rounds. Conductivity is generally proportional to total dissolved solids content.

3.1.2 Residential Wells

Results of the field analyses of residential well samples are presented in Table 2B. The March 1996 pH value at RW-2543 was 0.6 units lower than that observed in December 1993, whereas, the conductivity value was 24% lower than that observed in December, 1993. March 1996 pH and conductivity at RW-2551 were consistent with the December 1993 data.

3.2 Results of Laboratory Analytical Data

Laboratory analyses were performed for metals and cyanide, VOCs and three phthalates. Results for inorganics are presented on Tables 3A and 3B. Results for VOCs are presented on Tables 4A, and 4B. Results for phthalates are presented on Tables 5A and 5B. The first columns of each table present the NR140 WAC Enforcement Standards (ESs), NR140, WAC Preventive Action Limits (PALs), method detection limits and reporting limits for each compound.

The analytical results have been qualified by HES and/or STS. Definitions for the data qualifiers used are listed at the foot of each table. The laboratory analytical results observed for monitoring wells and residential wells are discussed below.

3.2.1 Monitoring Wells

Analytical results for monitoring wells are presented in Tables 3A, 4A, and 5A.

<u>VOCs</u> - The results of analysis of the monitoring well samples show nine ES exceedances and 21 PAL exceedances. ES and PAL exceedances for VOCs in samples from monitoring wells were as follows:

ES Exceedances

<u>Parameters</u>

Sample ID

Vinyl Chloride

MW-6S, MW-10S, MW-13S, MW-S1A, MW-S1AR MW-S2A, MW-S3, MW-S3A, MW-S3AR

(Additional ES exceedances were observed for methylene chloride in a field blank and a trip blank.)

PAL Exceedances

Parameters

Sample ID

1,2-dichloroethane Benzene MW-6S, MW-S3A, MW-S3AR MW-6S, MW-10S, MW-11S, MW-13S, MW-20S, MW-S1A, MW-S1AR, MW-S2A

M

MW-S3, MW-S3A, MW-S3AR MW-S1AR MW-S1AR

Chloroform
Cis-1,2-dichloroethene
Trichloroethene
Vinyl chloride
Bromodichloromethane

MW-6S, MW-S1AR, MW-S1A

MW-20S MW-S3AR

(Additional PAL exceedances were observed for chloromethane in 2 trip blanks and 1 field blank; and methylene chloride in one trip blank, 4 method blanks, and 2 storage blanks.)

Parameters

The March 1996 data differ from the Interim Monitoring data (collected prior to the remedy construction) in that March 1996 total xylene, ethylbenzene, and toluene concentrations were lower in several of the samples. The most significant decreases were for xylene in samples MW-6S, MW-13S, MW-S2, MW-S2A, and MW-S3. Total xylene concentrations in MW-13S, MW-S2, MW-S2A, and MW-S3 ranged form 270 to 770 μ g/L in December 1993 but ranged from only 6 to 100 μ g/L in March 1996.

More vinyl chloride NR140 exceedances were observed in March 1996 than in December 1993, including ES exceedances for vinyl chloride in samples from MW-13S and MW-S2A, and a PAL exceedance for vinyl chloride in sample MW-20S. But since the March 1996 vinyl chloride concentrations were less than 1 they were not, therefore, significantly different from the December 1993 concentrations for the same wells which were reported as not detected above the contract required quantitation limit (CRQL) of 1.

Metals - ES exceedances for iron and manganese were observed for samples MW-6S, MW-10S, MW-11S, MW-13S, MW-19S, MW-S1A, MW-S1AR, MW-S2, MW-S2A, MW-S3, and MW-S3AR. ES exceedances for manganese only were observed for MW-19D and MW-S3A. PAL exceedances for metals were as follows:

A BAMILLOLOLO	Sample 15
Arsenic	MW-15S
Barium	MW-11S, MW-13S, MW-S1AR,
	MW-S2
Iron	MW-7D

Sample ID

No PAL or ES exceedances were observed for cyanide. Cyanide was detected in several samples, but the levels were comparable to what was detected in a field blank so the sample concentrations were qualified with a "u". The highest cyanide concentration detected was approximately 10 times less than the PAL of 40 μ g/L.

With the exception of iron concentrations in MW-S2 and MW-S2A, March 1996 metal concentrations were similar to the metal concentration observed prior to the remedial construction. March 1996 iron concentrations in MW-S2 and MW-S2A were 15% and 5% respectively of the December 1993 iron concentrations for the same wells. The conductivity measurements for these two wells also dropped by 30 to 50%. Both of these wells also showed significant changes in total xylene concentrations.

Since changes in metal concentrations may be attributable to changes in atmospheric pressure and local groundwater infiltration rates, the data will continue to be evaluated for stable trends in metal concentrations.

Cyanide was not detected above the NR140 PAL in any of the LTGWM Round 1 samples. The March 1996 cyanide samples were treated with sulfamic acid to remove potential interferences from other nitrogen compounds. Although cyanide was detected in several of the March 1996 samples, the values were very low and were comparable to those detected in field or method blanks and so the data were qualified with a "u". Similarly many of the cyanide concentrations reported during the Interim Monitoring were qualified with a "u". Reported cyanide values for March 1996 samples were lower than the December 1993 samples in all samples except MW-15S. Since cyanide results were lower in samples treated with sulfamic acid, and cyanide has not been detected above the PAL, we propose dropping cyanide from the list of groundwater monitoring parameters.

Phthalates

Phthalates were detected in several samples, but were also detected in field and method blanks. In most cases, the phthalate concentrations in samples were comparable to those detected in field or method blanks, so the sample concentrations were qualified with a "u". At this time, groundwater quality standards exist only for bis (2-ethylhexyl) phthalate. The WDNR is planning, however, to evaluate di-n-butyl phthalate and diethyl phthalate for possible inclusion on the NR140 list in 1996 or 1997.

One ES exceedance of bis (2-ethylhexyl) phthalate was observed in sample MW-S3AR and PAL exceedances of bis (2-ethylhexyl) phthalate were observed in four method blanks. Since detection of phthalates has been shown in all recent sampling rounds to be related to post-sampling contamination, we propose dropping phthalates from the list of groundwater monitoring parameters.

3.2.2 Residential Wells

The results of the laboratory analyses of the residential well samples are presented in Tables 3B, 4B, and 5B. No PAL or ES exceedances were observed for VOCs, metals, cyanide, or phthalates. Results were comparable to those observed previously.

3.3 Conclusions

Round 1 of the LTGWM was conducted 27 months after completion of four quarters of Interim Monitoring conducted from March 1993 to December 1993. During that 27 month period, leachate and gas removal systems were installed within the fill areas, and an engineered cover was placed over the fill areas.

The purpose of the Interim Monitoring was to provide a data base against which post-remedial groundwater data could be compared. One purpose of the LTGWM is to provide post-

remedial data to be used to evaluate the effect of the leachate and gas removal systems on groundwater quality. Since only one round of post-remedial groundwater quality data is available, no conclusions regarding trends or changes in groundwater quality will be made at this time. The results of Round 1 of the LTGWM did, however, differ from the Interim Monitoring data as follows:

- Post-remedial concentrations of xylenes decreased as much as one to two orders of magnitude in samples from MW-13S, MW-S2, MW-S2A, and MW-S3. Each of these wells is downgradient of and within approximately 120 feet of the old fill area.
- Iron concentrations in samples from MW-S2 and MW-S2A decreased by approximately one order of magnitude.
- Specific conductance in samples from MW-11S, MW-19S, MW-S1, MW-S2, MW-S2A, and MW-S3 has decreased over the past three sampling rounds. Each of these wells is within approximately 90 feet of one of the fill areas.

The results of the Round 1 LTGWM were consistent with the Interim Monitoring data in the following respects:

- Phthalates, though detected in many groundwater samples, were also present at approximately the same concentrations in the field and method blanks. As a result, nearly all phthalate data points have been qualified with a "u" meaning "not detected above the concentration shown." Phthalates do not appear to be a site contaminant and continued analysis for phthalates will not provide useful, representative data.
- Cyanide was detected in several samples, as it had been in the Interim Monitoring. Sample concentrations were similar to those seen in field blanks, and were, in accordance with the data validation guidelines, qualified with a "u". The cyanide concentrations were slightly lower than those detected during the Interim Monitoring, possibly due to pre-treatment of samples to remove interferences. Continued analysis for cyanide is not necessary given it does not appear to be a site contaminant.
- Naphthalene was added to the list of target VOCs for a minimum of one round of the LTGWM. Naphthalene was included on the list of target compounds for Round 1 of the Interim Monitoring, but was dropped from the list of compounds for Interim Monitoring Rounds 2,3, and 4 because it was detected in few samples and at very low levels.

The highest concentration of naphthalene detected during Round 1 of the LTGWM was a concentration of 3 μ g/L in a method blank. Other method blanks also contained naphthalene, but at lower concentrations. Naphthalene was detected at concentrations of less than 1 μ g/L in several samples, but the values were qualified

with a "u" since similar or higher naphthalene levels in method blanks suggested a laboratory-borne contaminant source. Continued monitoring for naphthalene is not necessary since it does not appear to be a site contaminant.

3.4 Recommendations

Based on the observations noted above, STS makes the following recommendations for subsequent rounds of the LTGWM:

• Eliminate testing for phthalates, naphthalene, and cyanide since data acquired to date does not indicate that groundwater has been affected by phthalates, naphthalene, or cyanide.

4.0 QUALITY ASSURANCE REVIEW OF ANALYTICAL DATA

4.1 Field Data

The pH and conductivity meters were calibrated daily. Relative percent error (RPE) was determined by analysis of a check standard after every 10 or fewer samples, and Relative Percent Difference (RPD) was determined by analysis of a duplicate sample with every 10 or fewer samples. RPE for pH standards should be within 0.1 units of the true value and results of duplicate analysis for pH should agree within 0.2 units. The RPE of conductivity standards should be within 10 percent of the true value and the RPD of duplicate analysis of samples for conductivity should be within 15 percent. QA measurements for conductivity consistently fell within the control limits specified above.

QA measurements for pH exceeded the QC limit in one case. On March 12, 1996, the pH RPE for the 7.00 standard taken at the end of the day was 0.16 unit which exceeds the control limit of 0.1 unit. Samples MW-6S, MW-19D, MW-19S, MW-19S (Dupe) and MW-FB01 were analyzed before the QC exceedance and the pH data may, therefore, be suspect. Analysis of check standards throughout the remainder of the sampling event fell within the RPE limit of 0.1 unit. The RPE for duplicate analyses for pH consistently fell within the limit of 0.2 unit.

4.2 Laboratory Data

The analytical work for Round 1 of the LTGWM was completed in accordance with the QAPP. Methods of sample preservation and holding times are specified in the QAPP. Laboratory analytical methods, laboratory QA measurements and acceptance criteria for the QA measurements are specified in the QAPP or the associated Standard Operating Procedures (SOP) cited in the QAPP.

A brief case narrative was submitted by HES which discusses adherence of laboratory procedures and QA measurements to the standards specified in the QAPP. A copy of the HES narrative is provided as Appendix C to this technical memo. The following is a summary of the information presented in the HES narrative along with observations made during the QA evaluation performed by STS.

4.2.1 Sample Handling and Analytical Methods

The samples were preserved, secured, and analyzed in accordance with the QAPP. Copies of the completed chain-of-custody forms documenting sample collection, identification, preservation, and condition upon receipt are included in Appendix B to this technical memorandum.

The samples for VOCs, metals and cyanide were analyzed within the holding times specified in the QAPP. All SVOC samples except one of two duplicate samples from MW-13S were analyzed within the holding time for SVOCs. Sample MW-13S-Dupe was re-extracted and analyzed outside the holding time due to non-compliant surrogate recovery during the first analysis. Holding times were calculated from the date of sample receipt at the laboratory.

4.2.2 Blanks

Method and storage blanks were analyzed at the frequency specified in the analytical procedures. The storage blanks (used for VOCs only) contained methylene chloride, toluene, xylenes, and naphthalene. Methylene chloride concentrations in both storage blanks exceeded the PAL.

One or more VOC method blanks contained detectable levels of 1,2-dichlorobenzene, 2-hexanone, 4-methyl-2-pentanone, methylene chloride, toluene, xylene, and naphthalene. One or more method blanks for SVOCs contained bis (2-ethyl hexyl) phthalate, di-n-butylphthalate, and di ethyl phthalate. Method blanks for metals contained arsenic, iron, manganese and mercury. Concentrations of target analytes detected in the method blanks were within the control limits specified in the QAPP and in the analytical procedures. Analyte concentrations detected in samples at concentrations less than 5 times the concentrations in method blanks or storage blanks are flagged with a "u" to indicate that the data is likely not representative of site conditions.

Field and trip blanks were prepared at the frequency and according to the procedures specified in the QAPP. The field blanks monitor for contamination introduced during or after the sampling procedure. The trip blanks monitor for contamination introduced to VOC samples during container shipment from the laboratory and sample shipment to the laboratory. Results of field and trip blanks are shown on the attached tables. In accordance with the National Functional Guidelines, analyte concentrations detected in samples at concentrations less than five times those detected in trip or field blanks are flagged with a "u" to indicate that the data is likely not representative of actual site conditions. In accordance with these guidelines, all cyanide values, all but one bis (2-ethyl hexyl) phthalate value, all di-n-butyl phthalate values, and many VOC values have been qualified with a "u".

4.2.3 Surrogate and Matrix Spike Recoveries

Surrogates are added to each of the samples to be analyzed for VOCs to monitor for purging efficiency. Surrogate recoveries for VOCs were within the control limits for each of the samples, method blanks, and matrix spike samples analyzed.

Matrix spiking solutions are added to one of every twenty samples to be analyzed for VOCs or metals to monitor for matrix interference. Matrix spikes for VOCs were prepared in

duplicate. Spike recoveries and reproducibility were evaluated for 1,1-dichloroethene, trichloroethene, benzene, toluene, and chlorobenzene. Both the individual spike recoveries and the relative percent difference (RPD) of the duplicates were calculated and compared to control limits. High (or low) spike recoveries indicate a possible high (or low) bias in the reported values of these and similar compounds detected in the samples. The RPD is a measure of precision or reproducibility. All spiking compounds were recovered within the control limits. The RPD for each of the five spiking compounds and for each VOC MS/MSD pair were within control limits.

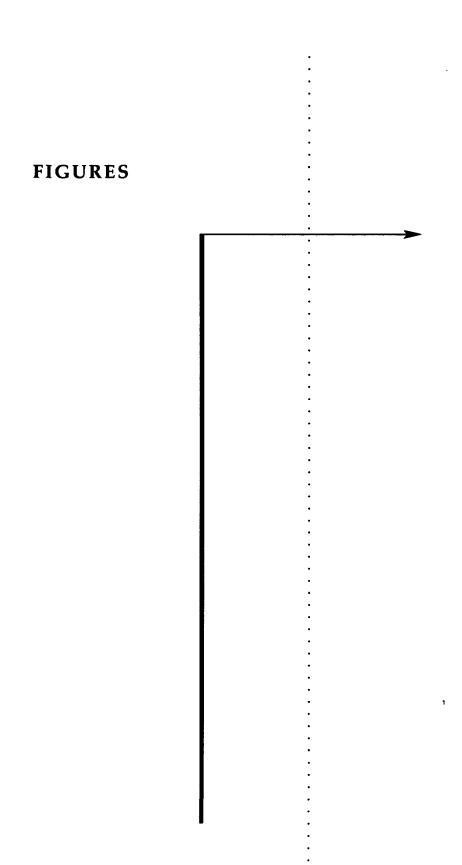
Surrogates are not used in the metals analyses and matrix spikes are added only once rather than in duplicate. The matrix spike for metals is added to one of every twenty samples. A matrix spiking solution consisting of arsenic, barium, cadmium, chromium, iron, lead, manganese, mercury, and cyanide was added to three samples. Matrix spike recoveries were within control limits.

In addition to the matrix spikes, post-digestion spikes were used for metals analyzed by graphite furnace methods (arsenic and lead). Post-digestion spike recovery for lead exceeded the upper control limit of 115% for samples MW-10S, and MW-S2. Post-digestion spike recoveries for the remaining samples and parameters were within control limits.

High matrix spike recoveries indicate a possible high bias in the reported results. Lead was not detected above the detection limit of 1 μ g/L in either of the two groundwater samples with high spike recovery. The high spike recoveries are not believed, therefore, to significantly affect the data quality.

4.2.4 Quality Assurance Summary

The laboratory analytical data is generally considered to be complete and meets the QA/QC criteria established in the QAPP. An attempt has been made, through application of the Guidelines for Data Validation, to identify non-representative data resulting from post-sampling contamination. The affected sample results have been appropriately qualified. Data which may reflect a bias based upon high or low spike recovery have also been appropriately qualified.



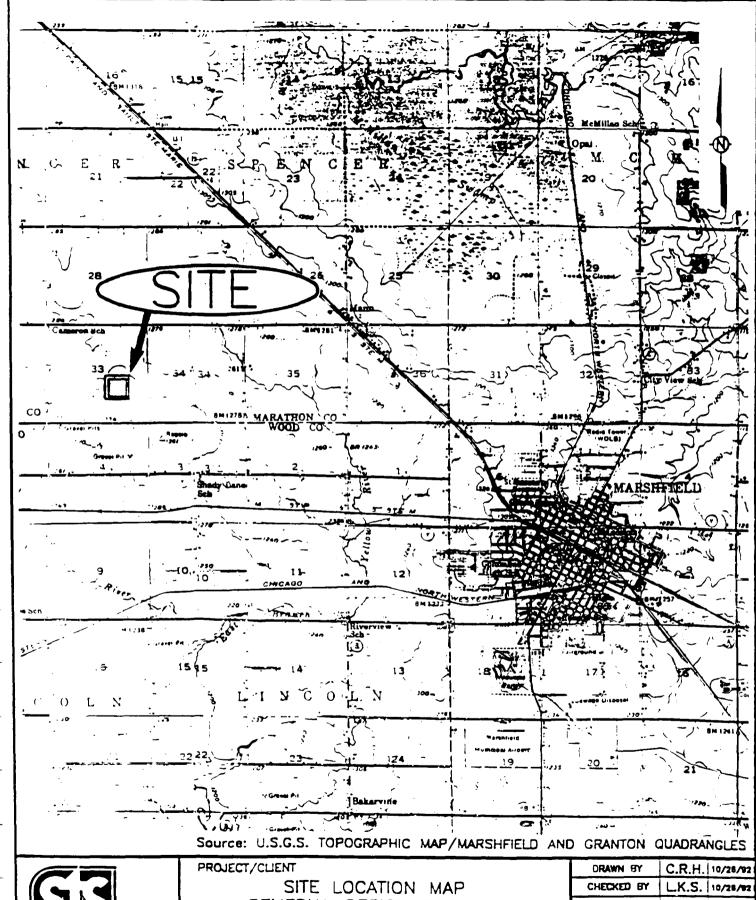
LIST OF FIGURES

Figure 1 - Site Location Diagram

Figure 2 - Long-Term Monitoring Well Location Diagram

Figure 3 - Groundwater Table Contour Map

Figure 4 - Piezometric Head Distribution



SI

STS Consultants, Ltd.

SITE LOCATION MAP
REMEDIAL DESIGN PROJECT
SPICKLER LANDFILL
TOWN OF SPENCER
MARATHON COUNTY, WISCONSIN

DRAWN BY	C.R.H. 10/28/92
CHECKED BY	LK.S. 10/25/92
APPROVED BY	T.W.K. 10/28/92
1"=5280"	FIGURE NO.
PLOT DATE 10-26-92	SIS PROJECT NO. 83894XF

SDMS US EPA REGION V FORMAT- OVERSIZED - 5 IMAGERY INSERT FORM

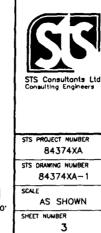
The item(s) listed below are not available in SDMS. In order to view original document or document pages, contact the Superfund Records Center.

		_
SITE NAME	SPICKLER LANDFILL	
DOC ID#	150820	
DESCRIPTION OF ITEM(S)	OVERSIZE SITE MAPS	
REASON WHY UNSCANNABLE	X_OVERSIZED ORFORMAT	
DATE OF ITEM(S)		
NO. OF ITEMS	2	
PHASE	SAS	
PRP		
PHASE (AR DOCUMENTS ONLY)	Remedial Removal Deletion Docket AR Original Update # Volume of	
O.U.		
LOCATION	Box # Folder # Subsection	
	COMMENT(S)	
PARTIA	L COPY OF OVERSIZED SITE MAPS	

NOTE:

- 1. CROUNDWATER ELEVATIONS TAKEN JUNE 13, 1996
- TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY PERFORMED BY KBM, INC. GRAND FORKS, SOUTH DAKOTA FOR WARZYN ENGINEERING INC., FROM PHOTOGRAPHY DATED APRIL 11, 1988. TOPOGRAPHIC BASE MAP OF LANDFILL SHOWS AS-BUILT FINISH GRADES DATED OCTOBER 14, 1994.

T THRUBALL NAME OF THE





NOTE:

- 1. GROUNDWATER ELEVATIONS TAKEN JUNE 13, 1998
- 2. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY PERFORMED BY KBM, INC. GRAND FORKS, SOUTH DAKOTA FOR WARZYN ENGINEERING INC., FROM PHOTOGRAPHY DATED APRIL 11, 1988. TOPOGRAPHIC BASE MAP OF LANDFILL SHOWS AS—BUILT FINISH GRADES DATED OCTOBER 14, 1994.



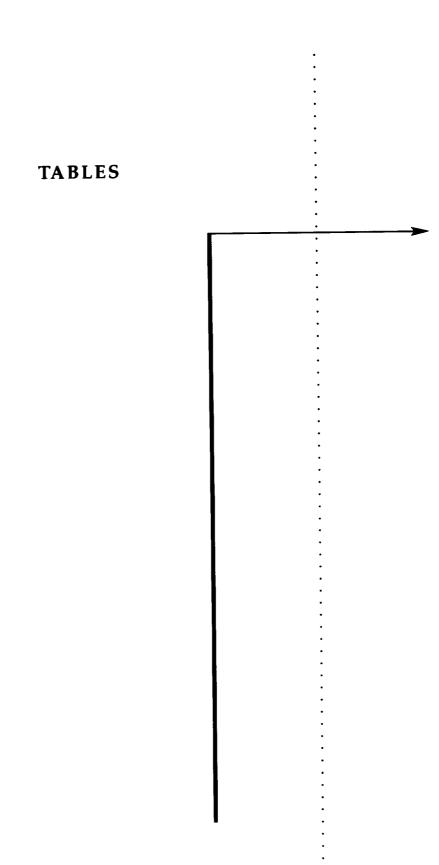
STS PROJECT NUMBER 84374XA

STS DRAWING NUMBER 84374XA-4

SCALE

AS SHOWN SHEET NUMBER

SCALE IN FEET 100' 100 ò



LIST OF TABLES

- Table 1 Groundwater Elevation Summary
- Table 2A Field Parameters, Groundwater Monitoring Wells
- Table 2B Field Parameters, Residential Wells
- Table 3A Metal and Cyanide Concentrations, Groundwater Monitoring Wells
- Table 3B Metal and Cyanide Concentrations, Residential Wells
- Table 4A Volatile Organic Compound Concentrations, Groundwater Monitoring Wells
- Table 4B Volatile Organic Compound Concentrations, Residential Wells
- Table 5A Phthalate Concentrations, Groundwater Monitoring Wells
- Table 5B Phthalate Concentrations, Residential Wells

Table 1
Groundwater Elevation Summary
Spickler Monitoring
STS Project No. 84374XA

	TPVC	Ground	Depth	Date: (02/15/95	Date:	3/30/95	Date:	4/25/95	Date:	6/5/95	Date:	9/8/95	Date:	9/15/95	Date:	12/15/95	Date:	3/11/96
	Pipe	Surface	of	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
Well No.	Elev	Elevation	Well	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
WW-6D	1307.24	1305.11	62.7	19.60	1287.64	18.36	1288.88	•		18.27	1288.97			19.47	1287.77	18.55	1288.69	18.32	1288.92
MW-6S	1307.23	1304.98	20.1	13.87	1293.36	13.37	1293.86			12.73	1294.50			14.02	1293.21	13.16	1294.07	13.88	1293.35
MW-7D	1319.42	1317.09	62.7	30.24	1289.18	29.57	1289.85 1300.67			28.85 20.34	1290.57 1299.48			30.41 23.29	1289.01 1296.53	29.61 20.30	1289.81 1299.52	29.28 20.16	1290.14 1299.66
MW-7S MW-8D	1319.82 1332.27	1317.34 1329.87	24.1 47.6	21.29 33.20	1298.53 1299.07	19.15 31.88	1300.87			29.87	1302.40			31.97	1300.30	32.44	1299.83	32.82	1299.45
MW-8D	1332.27	1329.86	22.5	14.80	1317.49	8.80	1323.49			11.22	1302.40			12.52	1319.77	11.85	1320.44	12.12	1320.17
MW-9S	1311.65	1309.33	28.6	17.93	1293.72	17.50	1294.15			16.77	1294.88			18.06	1293.59	17.39	1294.26	16.70	1294.95
MW-10D	1324.29	1322.25	62.6	33.25	1291.04	32.65	1291.64			32.40	1291.89			33.90	1290.39	33.05	1291.24	32.99	1291.30
MW-10S	1324.55	1322.48	20.8	8.79	1315.76	4.13	1320.42			6.92	1317.63			6.76	1317.79	5.84	1318.71	6.78	1317.77
MW-11S	1329.58	1327.21	20.6	18.60	1310.98	4.44	1325.14			6.40	1323.18			8.48	1321.10	8.18	1321.40	8.08	1321.50
MW-12D	1304.94	1302.71	62.5	21.09	1283.85	19.43	1285.51			19.49	1285.45			20.82	1284.12	19.81	1285.13	19.43	1285.51
MW-12S	1305.02	1302.74	27.8	14.82	1290.20	12.35	1292.67			12.92	1292.10			14.42	1290.60	13.52	1291.50	12.54	1292.48
MW-13D	1305.7	1303.40	62.8	17.65	1288.05	16.53	1289.17			16.32	1289.38			17.48	1288.22	16.70	1289.00	16.42	1289.28
MW-13S	1306.08	1303.69	23.6	12.40	1293.68	12.00	1294.08			11.33	1294.75			12.57	1293.51	11.85	1294.23	11.48	1294.60
MW-14D	1306.77	1304.74	62.4	18.30	1288.47	17.30	1289.47			17.07	1289.70			18.15	1288.62	17.35	1289.42	17.29	1289.48
MW-14S	1306.57	1304.35	26.3	12.45	1294.12	12.15	1294.42			11.44	1295.13			12.67	1293.90	12.08	1294.49	11.71	1294.86
MW-15D	1310.82	1305.67	72.6	21.45	1289.37	20.63	1290.19			20.35	1290.47			21.31	1289.51	20.70	1290.12	20.54	1290.28
MW-15S	1310.29	1307.95	27.4	14.61	1295.68	14.57	1295.72	***		13.85	1296.44			14.94	1295.35	14.41	1295.88	14.28	1296.01
MW-16S	1323.74	1321.52	20.9	7.80	1315.94	3.12	1320.62			5.21	1318.53	1470	1326.74	6.54	1317.20	5.17	1318.57	5.28	1318.46
MW-17\$R MW-18\$	1341.52	1338.90 1312.89	18.7 26.3	16.40 14.03	1325.12 1301.02	14.50 14.07	1327.02 1300.98			14.85 13.32	1326.67 1301.73	14.78	1320.74	14.95 14.70	1326.57 1300.35	15.75 14.22	1325.77 1300.83	15.28 14.40	1326.24 1300.65
MW-185	1315.05 1334.22	1312.89	20.3 52.2	35.00	1299.22	35.73	1298.49			34.60	1299.62			35.58	1298.64	35.54	1298.68	35.98	1298.24
MW-195	1334.22	1331.03	21.1	8.65	1325.69	7.30	1327.04			6.93	1327.41			6.95	1327.39	7.18	1327.16	8.01	1326.33
MW-20S	1298.93	1297.01	21.8	6.63	1292.30	5.65	1293.28			5.49	1293.44			6.76	1292.17	5.90	1293.03	5.43	1293.50
10100-200	1230.33	1237.01	21.0	0.00	1232.50	3.00	1200.20			3.43	1200.74			0.10	1232.17	0.00	1200.00	5.45	1255.50
S1	1331.86	1331.86	21.15	19.11	1312.75	18.80	1313.06			18.41	1313.45			18.34	1313.52			17.20	1314.66
S1A	1331.90	1331.90	49.15	34.00	1297.90	35.75	1296.15			34.04	1297.86	•		34.84	1297.06			34.25	1297.65
SIAR	1335.41	1332.48	41.9	NA	NA	NΑ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	37.54	1297.87
\$2	1311.87	1311.90	12	NA	NA	6.05	1305.82			4.95	1306.92			5.48	1306.39			5.76	1306.11
S2A	1311.81	1311.80	24.4	NA	NA	15.00	1296.81			14.76	1297.05			15.05	1296.76			16.14	1295.67
S2AR	1314.93	1312.37	30.8	NA 17.40	NA 1005.00	NA 17.40	NA 4000.40	NA	NA	NA 10.07	NA 4007.04	NA	NA	NA 10.00	NA 4005.00	NA	NA 1000 on	18.99	1295.94
S3	1313.28	1310.10	20.31	17.46	1295.82	17.18	1296.10			16.07	1297.21			18.22	1295.06	16.65	1296.63	15.78	1297.50
S3A S3AR	1312.71	1310.18	33.9 32.7	18.60	1294.11	18.20	1294.51	NIA	NIA	17.56	1295.15	ALA	ALA	18.82	1293.89	17.95	1294.76	17.80	1294.91
SSAR	1311.76	1308.89	32.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.62	1295.14
LH-1	1326.76	1324.08	7.1	Dry	Dry	Dry	Dry	6.22	1320.54	6.10	1320.66	6.22	1320.54	6.26	1320.50			6.74	1320.02
LH-4	1326.99	1325.13	14	13.05	1313.94	13.24	1313.75	13.36	1313.63	13.29	1313.70	13.26	1313.73	13.28	1313.71			Damage	
LH-6	1347.35	1344.27	7.72	16.00	1331.35	16.10	1331.25	15.99	1331.36	15.93	1331,42	15.72	1331.63	15.77	1331.58	15.90	1331.45	16.05	1331.30
LH-8	1344.61	1341.74	21.2	18.50	1326.11	17.73	1326.88	17.64	1326.97	17.85	1326.76	17.54	1327.07	17.40	1327.21	18.00	1326.61	17.86	1326.75
LH-9	1334.65	1330.70	11.5	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Sump#2	1328.08							13.50	1314.58									•-	
Sump#3	1341.46							8.02	1333.44										

Notes:

- Elevations are in feet relative to Mean Sea Level and depths are in feet.
- 2. NA = Data not available or well not present at that time.
- Top of PVC and Ground Surface Elevations were obtained on February 15, 1995.
- 4. --- = Groundwater Elevations not measured.

TABLE 2A
FIELD PARAMETERS
GROUNDWATER MONITORING WELLS
ROUND 1 LONG TERM GROUNDWATER
MONITORING
SPICKLER LANDFILL SITE

PARAMETER	MW-65	<u>MW-6D</u>	MW-6D (dupe)	<u>MW-7S</u>	<u>MW-7D</u>	MW-10S	MW-11\$	MW-13S	MW-13S (dupe)	<u>MW-13D</u>
pH (standard units)	5.40	5.61	5.70	5.12	5.87	5.93	5.98	6.19	6.21	6.57
Temperature (degrees Celsius)	8.9	8.1	8.9	11.0	10.3	9.0	6.0	9.9	9.9	9.1
Specific Conductance (umhos/cm)	220	42	43	190	41	613	1500	327	325	43

Notes:

TABLE 2A
FIELD PARAMETERS
GROUNDWATER MONITORING WELLS
ROUND 1 LONG TERM GROUNDWATER
MONITORING
SPICKLER LANDFILL SITE

PARAMETER	MW-14S	MW-15S	MW-15D	MW-19S	MW-19S (dupe)	MW-19D	MW-20S	MW-\$1	MW-\$1A	MW-S1AR
pH (standard units)	6.19	6.26	6.60	6.13	6.17	5.48	6.05	6.72	6.65	6.62
Temperature (degrees Celsius)	7.9	7.0	10.0	11.0	11.0	11.0	6.1	6.1	7.3	7.5
Specific Conductance (umhos/cm)	106	155	33	861	833	74	191	307	1254	3246

Notes:

TABLE 2A
FIELD PARAMETERS
GROUNDWATER MONITORING WELLS
ROUND 1 LONG TERM GROUNDWATER
MONITORING
SPICKLER LANDFILL SITE

PARAMETER	MW-S2	MW-S2A	MW-S2AR	MW-\$3	MW-S3A	MW-S3A (dupe)	MW-S3AR
pH (standard units)	6.27	5.90	5.83	6.09	5.53	5.50	6.10
Temperature (degrees Celsius)	6.1	8.0	8.1	6.1	8.0	8.5	6.1
Specific Conductance (umhos/cm)	368	426	301	368	514	507	449

Notes:

TABLE 2B FIELD PARAMETERS RESIDENTIAL WELLS ROUND 1 LONG TERM GROUNDWATER MONITORING SPICKLER LANDFILL SITE

PARAMETER	RW-2543	RW-2543 (dupe)	RW-2551
pH (standard units)	5.93	5.99	6.06
Temperature (degrees Celsius)	10.1	10.1	10.3
Specific Conductance (umhos/cm)	87	86	119

Notes:

Table 3A
Metal and Cyanide Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

	IDL	CRDL	NR140 PAL	NR140 ES	MW-6D	MW-6S	<u>MW-7D</u>	MW-7S	MW-10S	MW-11S	MW-13D	MW-13S
Analyte, μg/l												
Arsenic	1.0	10.0	5	50	1 U	2.9 B	1.0 U	1.0 U	1.0 U	1.6 B	1 U	1 U
Barium	0.6	200	400	2000	1.5 U	93.1 U	1.1 U	52.0 U	230	482	2.5 U	433
Chromium	3.6	10	10	100	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U
Cyanide	2.5	10	40	200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U
Iron	6.6	100	150	300	6.6 U	5090	155	19.9 U	12700	41300	6.6 U	3280
Lead	1.0	3.0	1.5	15	1 U	1 U	1.0 U	1.0 U	1.0 U W2	1 U	1 U	1 U
Manganese	0.3	15	25	50	3.8 U	1320	24.0	12.8 U	798	2970	4.3 U	5960
Mercury	0.03	0.2	0.2	2	0.03 ป	0.03 U	0.10 U	0.17 U	0.20 U	0.04 U	0.12U	0.05 U

Notes:

Samples collected in March 1996

Units in μ g/L

U = analyte not detected above concentration shown

B = analyte detected, but below contract required detection limit

CRQL - Contract Required Detection Limit

IDL - Instrument Detection Limit

W2 - Post digestion spike recovery exceeded upper control limit.

ES Exceedance -

^{*} MW-S1 did not contain sufficient water to sample for metals and cyanide.

Table 3A
Metal and Cyanide Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

	MW-13S										MW-19S	
	IDL	CRDL	NR140 PAL	NR140 ES	(Dupe)	MW-14S	MW-15D	MW-15S	MW-19D	MW-19S	(Dupe)	MW-20S
Analyte, μg/l												
Arsenic	1.0	10.0	5	50	1 U	1 U	1 U	28.8	1 U	3.5 B	3.2 B	1 U
Barium	0.6	200	400	2000	464	47.1 U	3.9 U	50.2 U	45.3 U	243	235	55.4 U
Chromium	3.6	10	10	100	3.6 U							
Cyanide	2.5	10	40	200	2.5 U	2.5 U	2.5 U	4.3 U	2.7 U	3.3 U	2.5 U	2.8 U
Iron	6.6	100	150	300	3940	6.6 U	6.6 U	6.6 U	125	25600	25400	6.6 U
Lead	1.0	3.0	1.5	15	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Manganese	0.3	15	25	50	6490	6 U	5.3 U	15.4 U	142	1070	1060	12.7 U
Mercury	0.03	0.2	0.2	2	0.13 U	0.15 U	0.03 U	0.07 U	0.03 U	0.03 U	0.03 U	0.03 U

Notes:

Samples collected in March 1996

Units in µg/L

U = analyte not detected above concentration shown

B = analyte detected, but below contract required detection limit

CRQL - Contract Required Detection Limit

IDL - Instrument Detection Limit

W2 - Post digestion spike recovery exceeded upper control limit.

ES Exceedance -

^{*} MW-S1 did not contain sufficient water to sample for metals and cyanide.

Table 3A
Metal and Cyanide Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

	<u>IDL</u>	CRDL	NR140 PAL	NR140 ES	MW-S1A	MW-S1*	MW-S1AR	MW-S2	MW-S2A	MW-S2AR	MW-S3	MW-S3A
Analyte, μg/l												
Arsenic	1.0	10.0	5	50	14.4 U		2.3 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Barium	0.6	200	400	2000	309		580	1690	137 B	27.1 U	128 B	243
Chromium	3.6	10	10	100	3.6 U		3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U
Cyanide	2.5	10	40	200	2.5 U		2.5 U	2.5 U	3 U	2.5 U	2.5 U	2.5 U
Iron	6.6	100	150	300	18900		31800	2130	830	6.6 U	3480	41.5 U
Lead	1.0	3.0	1.5	15	1.0 U	•	1.0 U	1.0 U W2	1.0 U	1.0 U	1.0 U	1.0 U
Manganese	0.3	15	25	50	5910		12600	6660	3720	131	731	558
Mercury	0.03	0.2	0.2	2	0.17 U	•	0.3 U	0.22 U	0.19 U	0.12 U	0.37 U	0.32 U

Notes:

Samples collected in March 1996

Units in μ g/L

U = analyte not detected above concentration shown

B = analyte detected, but below contract required detection limit

CRQL - Contract Required Detection Limit

IDL - Instrument Detection Limit

W2 - Post digestion spike recovery exceeded upper control limit.

ES Exceedance -

^{*} MW-S1 did not contain sufficient water to sample for metals and cyanide.

Table 3A
Metal and Cyanide Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

MW-S3A											
	IDL	CRDL	NR140 PAL	NR140 ES	(Dupe)	MW-S3AR	MW-FB01	MW-FB02	MW-FB03	Prep Blank	Prep Blank
Analyte, µg/l				ĺ						ſ	
Arsenic	1.0	10.0	5	50	1.0 U	1.0 U	1 U	1.0 U	1.0 U	2.220 B	1 U
Barium	0.6	200	400	2000	233	108 B	0.6 U	0.60 U	21.2 B	0.600 U	0.6 U
Chromium	3.6	10	10	100	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.600 U	3.6 U
Cyanide	2.5	10	40	200	2.5 U	2.5 U	3.7 U	2.5 U	2.5 U	2.500 U	2.5 U
tron	6.6	100	150	300	40.6 U	537	6.6 U	6.6 U	6.6 U	14.429 B	15.359 B
Lead	1.0	3.0	1.5	15	1.0 U	1.0 U	1.2 B	1.0 U	1.2 B	1.000 U	1 U
Manganese	0.3	15	25	50	538	266	4.3 U	3.0 U	7.3 U	2.804 B	3.012 B
Mercury	0.03	0.2	0.2	2	0.31 U	0.22 U	0.03 U	0.16 U	0.17 U	0.118 B	0.079B
										•	

Notes:

Samples collected in March 1996

Units in μ g/L

U = analyte not detected above concentration shown

B = analyte detected, but below contract required detection limit

CRQL - Contract Required Detection Limit

IDL - Instrument Detection Limit

W2 - Post digestion spike recovery exceeded upper control limit.

ES Exceedance -

^{*} MW-S1 did not contain sufficient water to sample for metals and cyanide.

Table 3B
Metal and Cyanide Concentrations
Residential Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

						RW-2543		
	<u>IDL</u>	CRDL	NR140 PAL	NR140 ES	RW-2543	(Dupe)	RW-2551	RW-FB01
<u>Analyte, μg/l</u>				Ì				
Arsenic	1.0	10.0	5	50	1 U	1 U	1 U	1 U
Barium	0.6	200	400	2000	8.4 B	8.6 B	5.7 B	0.6 U
Chromium	3.6	10	10	100	3.6 U	3.6 U	3.6 U	3.6 U
Cyanide	2.5	10	40	200	2.5 U	2.5 U	2.5 U	2.5 U
Iron	6.6	100	150	300	6.6 U	6.6 U	6.6 U	6.6 U
Lead	1.0	3.0	1.5	15	1 U	1 U	1 U	1 U
Manganese	0.3	15	25	50	7.3 U	7.6U	5.2 U	3.3 U
Mercury	0.03	0.2	0.2	2	0.03U	0.03 U	0.03 U	0.03 U
•					{			

Notes:

Samples collected in March 1996

Units in μ g/L

U = analyte not detected above concentration shown

B = analyte detected, but below contract required detection limit

CRQL - Contract Required Detection Limit

IDL - Instrument Detection Limit

ES Exceedance -

PAL Exceedance -

Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

	CRQL	NR140 PAL	NR140 ES	MW-6D	MW-6S	<u>MW-7D</u>	<u>MW-7S</u>	MW-10S	MW-11S
Analyte		00	200	4.11	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	60	600	1 U				1 U	1 U
1,3-Dichlorobenzene	1	125	1250	10	1 U	1 U	1 U		
1,4-Dichlorobenzene	1	15	75	10	1 U	1 U	1 U	1 U	0.6 J
1,1,1-Trichloroethane	11	40	200	10	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	0.02	0.2	10	10	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	0.5	5	10	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	85	850	1 U	2	1 U	1 U	0.1 J	1 U
1,1-Dichloroethene	1	0.7	7	1 U	0.1 J	1 U	1 U	1 U	1U
1,2-Dibromo-3-chloropropane	1	0.02	0.2	10	1 U	1 Ü	1 U	1 U	1 U
1,2-Dibromoethane	1	0.005	0.05	10	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	0.5	5	1 U	҈0.8 J	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5	90	460	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5			5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5	200	1000	5 U	5 U	5 U	2 U	5 U	5 U
Benzene . 7		0.5	5	1 U	3 3	1 U	1 U	2 3 3 3	0.7.J
Bromodichloromethane	1	0.06	0.6	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1	0.44	4.4	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1	10	l 1U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	1			1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 Ư
Chlorobenzene	1	20	200	10	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	80	400	1 U	1	1 U	1 U	0.2 J	1 U
Chloroform · ·\	1	0.6	6	1 U	10	1 U	1 U	1 U	1 U
Chloromethane	1	0.3	3	0.6 U	1 U	1 U	1 U	1 U	0.2 U
Cis-1,2-Dichloroethene	1	7	70	1 U	2	1 U	1 U	1 U	1 U
Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1	6	60	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	140	700	1 U	1 U	1 U	1 U	9	1 U
Methylene Chloride - 6	2	0.5	5	0.2 U	≨5 U	0.2 U	0.1 U	0.2 U	0.3 U
Styrene	1	10	100	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene ~ 7	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
Toluene -//	1	68.6	343	1 U	1 U	0.1 U	0.1 U	1 U	1 U
Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1-3-Dichloropropene	1	0.02	0.2	l 10	1 U	1 U	1 U	1 U	1 U
Trichloroethene - 8	1	0.5	5	1 U	₩ 0.9 J	1 U	1 U	1 U	1 U
Vinyl Chloride \	1	0.02	0.2	1 U	2	1 U	1 U	0.3 J	l 10
Xylene (total) _ q	1	124	620	1 U	14 U	1 U	1 U	51 X	1 U
Bromochloromethane - 10	1			10	1 U	1 U	1 U	1 U	1 U
Naphthalene	5	8	40	5 U	5 U	5 U	<u>5 U</u>	0.6 U	5 Ü
Dilution Factor	•	J	70	1.0	1.0	1.0	1.0	1.0	1.0
Dilution Factor			1	II 1.0	1.0	1.0	1.0	1.0	1.0

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance - ES Exceedance -

Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

		CRQL	NR140 PAL	NR140 ES	MW-13D	MW-13S	MW-13S (Dil)	MW-13S(Dupe)	MW-13S (Dupe Dil)
	Analyte								
	1,2-Dichlorobenzene	1	60	600	1 U	1 U	5 U	1 U	5 U
	1,3-Dichlorobenzene	1	125	1250	1 U	1 U	5 U	1 U	5 U
	1,4-Dichlorobenzene	1	15	75	1 U	1 U	5 U	1 U	5 U
	1,1,1-Trichloroethane	1	40	200	1 U	1 U	5 U	1 U	5 U
	1,1,2,2-Tetrachloroethane	1	0.02	0.2	1 U	1 Ú	5 U	1 U	5 U
	1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	5 U	1 U	5 U
	1,1-Dichloroethane	1	85	850	1 U	0.3 J	5 U	0.3 J	5 U
	1,1-Dichloroethene	1	0.7	7	1 U	1 U	5 U	1 U	5 U
	1,2-Dibromo-3-chloropropane	1	0.02	0.2	1 U	1 U	5 U	1 U	5 U
	1,2-Dibromoethane	1	0.005	0.05	1 U	1 U	5 U	1 U	5 U
	1,2-Dichloroethane - 1	1	0.5	5	1 U	1 U	5 U	1 U	5 U
	1,2-Dichloropropane	_ 1	0.5	5	1 U	1 U	5 U	1 U	5 U
	2-Butanone	5	90	460	5 U	5 U	25 U	5 U	25 U
	2-Hexanone	5			5 U	5 U	25 U	5 U	25 U
	4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	25 U	5 U	25 U
_	Acetone	5	200	1000	5 U	5 U	25 U	5 U	25 U
	Benzene 🔧	1	0.5	5	1 U	1	1 DJ	1	1 DJ
	Bromodichloromethane	1	0.06	0.6	1 U	1 U	5 U	1 U	5 U
	Bromoform	1	0.44	4.4	10	1 U	5 U	1 U	5 U
	Bromomethane	1	1	10	1 U	1 U	5 U	1 U	5 U
	Carbon Disulfide	1			1 U	1 U	5 U	1 U	5 U
	Carbon Tetrachloride	1	0.5	5	1 U	1 U	5 U	1 U	5 U
~ .	Chlorobenzene	1	20	200	1 U	1 U	5 U	1 U	5 U
	Chloroethane	1	80	400	1 U	1 U	5 U	1 U	5 U
	Chloroform 4	1	0.6	6	1 U	1 U	5 U	1 U	5 U
	Chloromethane	1	0.3	3	0.4 U	0.2 U	5 U	1 U	5 U
	Cis-1,2-Dichloroethene	1	7	70	1 U	0.7 J	0.5 DJ	0.8 J	0.6 DJ
	Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	5 U	1 U	5 U
	Dibromochloromethane	1	6	60	1 U	1 U	5 Ü	1 U	5 U
	Ethylbenzene	1	140	700	1 U	21	18 D	20	19 D
	Methylene Chloride - 6	2	0.5	5	0.2 U	0.4 U	3 U	0.5 U	3 U
	Styrene	1	10	100	1 U	1 U	5 U	1 U	5 U
	Tetrachloroethene - 7	1	0.5	5	1 U	1 U	5 U	1 Ü	5 U
70.7	Toluene - 1/	1	68.6	343	1U	0.2 U	5 U	0.8 U	5 U
	Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	5 U	1 U	5 U
	Trans-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	5 U	1 U	5 U
	Trichloroethene - &	1	0.5	5	1 U	0.2 J	5 U	0.3 J	5 U
	Vinyl Chloride	1	0.02	0.2	1 U	0.3 J	5 U	0.2 J	5 U
	Xylene (total)	1	124	620	1 U	78 BXE	78 DX	73 BXE	87 DX
	Bromochloromethane 10	1			1 U	1 U	5 U	1 U	5 U
. 1	Naphthalene	5	8	40	5 U	5 U	0.8 U	5 U	25 U
	Dilution Factor				1.0	1.0	5.0	1.0	5.0
					•				

_ Notes:

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

- B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

ES Exceedance -

Table 4A

Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring

Spickler Landfill Site
STS Project No. 84374XA

Analista	CRQL	NR140 PAL	NR140 ES	MW-14S	MW-15D	<u>MW-15S</u>	MW-19D	MW-19S	MW-19S (Dupe)
Analyte	1	60	600	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1	125	1250	10	10	1 U	1 U	1 U	10
1,3-Dichlorobenzene	-					1 U		1 U	1 U
1,4-Dichlorobenzene	1	15	75	10	1 U		1 U		
1,1,1-Trichloroethane	1	40	200	1 U	<u>1U</u>	1 U	1 U	1 U	10
- 1,1,2,2-Tetrachloroethane	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U	' 1 U
1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	85	850	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1	0.7	7	1 U	<u> 1 U</u>	1 U	<u> 1U</u>	1 U	1 U
1,2-Dibromo-3-chloropropane	1	0.02	0.2	1 Ü	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	0.005	0.05	1 υ	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	11	0.5	5	1 U	1 U	1 U	1 U	1 U	<u> </u>
2-Butanone	5	90	460	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5			5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5	200	1000	5 U	5 U	5 U	2 J	5 U	5 U
Benzene 🕓	1	0.5	5	10	1 U	1 U	1 U	0.1 J	0.1 J
Bromodichloromethane	1	0.06	0.6	1 υ	1 U	1 U	1 U	1 U	1 U
Bromoform	1	0.44	4.4	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1	10	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	1			1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	0.5	5	1 υ	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1	20	200	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	80	400	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1	0.6	6	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1	0.3	3	1 U	0.3 U	0.2 U	0.3 U	0.2 U	0.2 U
Cis-1,2-Dichloroethene	1	7	70	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochtoromethane	1	6	60	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1	140	700	1 U	1 U	1 U	1 U	0.5 J	0.6 J
Methylene Chloride - 6	2	0.5	5	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U
Styrene	1	10	100	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene -7	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
Toluene - //	1	68.6	343	0.2 U	1 U	0.1 U	1 U	1 U	1 U
Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U	1 U
_Trichloroethene &	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride \	1	0.02	0.2	1 υ	1 U	1 U	1 U	1 U	1 U
Xylene (total) - 9	1	124	620	1 U	1 U	1 U	1 U	5 X	6 X
Bromochloromethane-10	1		-	10	1 U	1 U	1 U	1 U	1 U
Naphthalene	5	8	40	5 U	5 U	5 U	5 U	5 U	5 U
Dilution Factor	-	·		1.0	1.0	1.0	1.0	1.0	1.0
								•••	.,.

__ Notes:

Samples collected in March 1996

Units in $\mu g/L$

U ≈ compound not detected above concentration listed

. - B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- ≈ No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

- X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

ES Exceedance -

Page 3 of 9

Table 4A **Volatile Organic Compound Concentrations Groundwater Monitoring Wells Round 1 Long Term Groundwater Monitoring** Spickler Landfill Site STS Project No. 84374XA

	CRQL	NR140 PAL	NR140 ES	MW-20S	MW-\$1	MW-S1A	MW-S1A (Dil)	MW-S1AR
<u>Analyte</u>								
1,2-Dichlorobenzene	1	60	600	1 U	1 U	1 U	5 U	1 U
1,3-Dichlorobenzene	1	125	1250	1 U	1 U	1 U	5 U	1 U
1,4-Dichlorobenzene	1	15	75	1 U	1 U	0.2 J	5 U	0.6 J
1,1,1-Trichloroethane	1	40	200	10	1 U	1U	5 U	1 U
1,1,2,2-Tetrachloroethane	1	0.02	0.2	1 U	1 U	1 U	5 U	10
1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	1 U	5 U	1 U
1,1-Dichloroethane	1	85	850	1 U	1 U	1	1 DJ	5
1,1-Dichloroethene	1	0.7	7	1 U	1 U	1 U	5 U	0.1 J
1,2-Dibromo-3-chloropropane	1	0.02	0.2	1 U	1 U	1 U	5 U	1 Ü
1,2-Dibromoethane	1	0.005	0.05	1 U	1 U	1 U	5 U	1 U
1,2-Dichloroethane	1	0.5	5	1 U	1 U	1 U	5 U	0.3 J
1,2-Dichloropropane	1	0.5	5	1 U	1 U	1 U	5 U	1 U
2-Butanone	5	90	460	5 U	5 U	5 U	25 U	20
2-Hexanone	5			5 U	5 U	5 U	25 U	5 U
4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	0.3 J	25 U	15
Acetone	5	200	1000	5 U	4 U	5 U	25 U	59 U
Benzene 1)	1	0.5	5	0.8 J	1 U	_0.6 J	0.9 DJ	·. 2 .
Bromodichloromethane	1	0.06	0.6	1 U	1 U	1 U	5 U	1 U
Bromoform	1	0.44	4.4	1 U	1 U	1 U	5 U	1 U
Bromomethane	1	1	10	1 U	1 U	1 U	5 U	1 U
Carbon Disulfide	1			1υ	1 U	0.1 J	5 U	1 U
Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U	5 U	1 U
Chlorobenzene	1	20	200	1 U	1 U	1 U	5 U	1 U
Chloroethane	1	80	400	1 U	4 U	1	5 U	0.6 J
Chloroform	1	0.6	6	1 U	4 U	0.1 J	5 U	A 2
Chloromethane	1	0.3	3	0.2 U	0.4 U	1 U	U 8.0	0.5 U
Cis-1,2-Dichloroethene	1	7	70	0.3 J	1 U	4.0	4 DJ	22
Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U	5 U	1 U
Dibromochloromethane	1	6	60	1 U	1 U	1 U	5 U	1 U
Ethylbenzene	1	140	700	1 U	1 U	2	1 DJ	6
Methylene Chloride -6	2	0.5	5	0.2 U	4 U	5 U	7 U	5 U
Styrene	1	10	100	1 U	1 U	1 U	5 U	1 U
Tetrachloroethene - 7	1	0.5	5	1 U	1 U	0.3 J	5 U	0.4 J
Toluene ~ //	1	68.6	343	1 U	1 U	17	16 D	43 E
Trans-1-2-Dichloroethene	1	20	100	1 υ	1 U	0.1 J	5 U	0.4 J
Trans-1-3-Dichloropropene	1	0.02	0.2	10	1 U	1 U	5 U	1 U
Trichloroethene - 6	1	0.5	5	1 U	1 U	%1 E	41 DJ	: : : : : :
Vinyl Chloride	1	0.02	0.2	30.1 J €	4 U	58 E	35 D	140 E
Xylene (total) - 9	1	124	620	10	1 U	9 BX	8 U	24 BX
Bromochloromethane 10	1			10	1 U	1 U	1 U	1U
Naphthalene	5	8	40	5 U	0.2 U	0.2 U	25 U	0.4 U
Dilution Factor	-	ū		1.0	1.0	1.0	5.0	1.0
Diadion Factor				u	,		J. U	

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

ES Exceedance -

Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

Amalaka	CRQL	NR140 PAL	NR140 ES	MW-S1AR (Dil)	MW-S2	MW-S2A	MW-S2AR	MW-S3	MW-S3 (Dil)
<u>Analyte</u> 1,2-Dichlorobenzene	1	60	600	10 U	1 U	1 U	1 U	1 U	5 U
1,3-Dichlorobenzene	1	125	1250	10 U	1 U	1 U	1 U	1 U	5 U
1,4-Dichlorobenzene	1	15	75	10 U	1 U	1 U	1 U	0.2 J	5 U
1,1,1-Trichloroethane	1	40	200	10 U	1 U	1 U	1 U	1 U	5 U
1,1,2,2-Tetrachloroethane	1	0.02	0.2	10 U	1 U	1 U	1 U	1 U	5 U
1,1,2-Trichloroethane	1	0.5	5	10 U	1 U	1 U	1 U	1 U	5 U
1,1-Dichloroethane	1	85	850	4 DJ	1 U	0.6 J	0.3 J	2	2 DJ
1,1-Dichloroethene	1	0.7	7	10 U	1 U	1 U	1 U	1 U	5 U
1,2-Dibromo-3-chloropropane	1	0.02	0.2	10 U	1 U	1 U	1 U	- 10	5 U
1,2-Dibromoethane	1	0.005	0.2	10 U	1 U	1 U	1 U	1 U	5 U
1,2-Discombetmane	1	0.003	5	10 U	1 U	1 U	1 U	1 U	5 U
— 1,2-Dichloropropane	1	0.5	5	10 U	1 U	1 U	1 U	1 U	5 U
2-Butanone	5	90	460	50 U	5 U	5 U	5 U	5 U	25 U
2-Hexanone	5			50 U	5 U	5 U	5 U	5 U	25 U
4-Methyl-2-Pentanone (MIBK)	5	50	500	13 U	5 U	5 U	5 U	5 U	25 U
Acetone (MIDIC)	5	200	1000	50 U	5 U	5 U	5 U	5 U	25 U
Benzene		0.5	5	2 DJ	0.2 J	∞0.8 J	0.1 J	3,	25 DJ
Bromodichloromethane	1	0.06	0.6	10 U	1 U	1 U	1 U	1 U	5 U
Bromoform	1	0.44	4.4	10 U	1 U	1 U	1 U	1 U	5 U
Bromomethane	1	1	10	10 U	1 U	1 U	1 U	1 U	5 U
Carbon Disulfide	 _	 -		10 U	1 U	10	10	1 U	5 U
Carbon Tetrachloride	1	0.5	5	10 U	1 U	1 U	1 U	1 U	5 U
- Chlorobenzene	1	20	200	10 U	1 U	1 U	1 Ü	1 U	5 U
Chloroethane	1	80	400	10 U	1 U	0.1 J	1 U	3	3 DJ
Chloroform	1	0.6	6	1 DJ	1 U	1 U	1 U	8 U	5 U
Chloromethane	1	0.3	3	10 U	1 U	1 U	1 U	0.7 U	0.6 U
Cis-1,2-Dichloroethene	1	7	70	20 D	1 U	0.4 J	1 U	0.7 J	0.6 DJ
Cis-1-3-Dichloropropene	1	0.02	0.2	10 U	1 U	1 U	1 U	1 U	5 U
Dibromochloromethane	1	6	60	10 U	1 U	1 U	1 U	1 U	5 U
- Ethylbenzene	1	140	700	4 DJ	1 Ü	2	1 U	20	19 D
Methylene Chloride 6	2	0.5	5	10 U	4 Ü	3 U	4 U	3 U	5 U
Styrene	1	10	100	10 U	1 U	1 U	1 U	1 U	5 U
Tetrachloroethene -7	1	0.5	5	10 U	1 U	1 U	1 U	1 U	5 U
Toluene - //	1	68.6	343	45 D	1 U	0.7 U	0.2 U	0.2 U	5 U
Trans-1-2-Dichloroethene	1	20	100	10 U	1 U	1 U	1 U	1 U	5 U
Trans-1-3-Dichloropropene	1	0.02	0.2	10 U	1 U	1 U	1 U	1 U	5 U
— Trichloroethene - €	1	0.5	5		1 U	1 U	1 U	1 U	5 U
Vinyl Chloride	1	0.02	0.2	110 D	1 U	0.2 J	1 U	2	2 DJ
Xylene (total) - 9	1	124	620	22 BDX	6 X	7 BX	0.2 U	80 XE	84 BDX
Bromochloromethane -/o	_1_			10 U	1 U	1 U	1 U	1 U	5 U
Naphthalene	5	8	40	50 U	0.1 U	5 U	0.2 U	0.8 U	. 0.7 U
Dilution Factor				10.0	1.0	1.0	1.0	1.0	5.0

__ Notes:

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

ES Exceedance -

Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

	CRQL	NR140 PAL	NR140 ES	MW-S3A	MW-S3A (Dupe)	MW-S3AR	MW-FB02	MW-FB03	MW-TB02
<u>Analyte</u>			}	}					
1,2-Dichlorobenzene	1	60	600	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1	125	1250	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1	15	75	2	2	0.4 J	1 U	1 U	1 U
1,1,1-Trichloroethane	1	40	200	1 U	1 U	1 U	1 U	1 U	1 U
- 1,1,2,2-Tetrachloroethane	1	0.02	0.2	10	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1	85	850	13	13	12	1 U	1 U	1 U
1,1-Dichloroethene	1	0.7	7	0.2 J	0.2 J	0.2 J	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1	0.005	0.05	1 (1	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1	0.5	5	45	14.	4	1 U	1 U	1 U
1,2-Dichloropropane	1	0.5	5	1 U	10	1 U	1 U	1 U	1 U
2-Butanone	5	90	460	5 U	5 U	5 U	5	5 U	5 U
2-Hexanone	5			5 U	5 U	5 U	5 U	5 Ų	5 U
4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5	200	1000	5 U	5 U	5 U	8	7	5 U
Benzene 3	1	0.5	5	3%	3	1.0	1 U	1 U	1 Ü
Bromodichloromethane	1	0.06	0.6	1 U	1 U	0.3 J	1 U	1 U	1 U
Bromoform	1	0.44	4.4	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1	1	10	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	1			1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
 Chlorobenzene 	1	20	200	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1	80	400	10	9	6	10	1 U	2 U
Chloroform	1	0.6	6	1 U	1 U	0.3 J	1 U	1 U	2 U
Chloromethane	1	0.3	3	0.4 U	0.4 U	1 U	1 U	1 U	0.4J
Cis-1,2-Dichloroethene √	1	7	70	5	6	6	1 U	1 U	1 U
Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	10	1 U	1 U	1 U	1 U
Dibromochloromethane	1	6	60	1 U	10	`0.2 J	1 U	1 Ü	1 U
 Ethylbenzene 	1	140	700	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride ~ 6	2	0.5	5	6 U	5 U	6 U	0.2 U	6 B	0.4 JB
Styrene	1_	10	100	1 U	1U	1 U	1 U	<u>1</u> U	<u> 1 U </u>
Tetrachloroethene - 7	1	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U
Toluene - //	1	68.6	343	0.2 U	0.1 U	0.3 U	0.1 J	0.2 J	1 U
Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1-3-Dichloropropene	1_	0.02	0.2	1 U	1U	1U	1U	1 U	1 U
— Trichloroethene → 8	1	0.5	5	0.2 J	0.2 J	0.2 J	1 U	1 U	1 U
Vinyl Chloride	1	0.02	0.2	5	4	2	1 U	1 U	2 U
Xylene (total) - 9	1	124	620	2 U	2 U	0.5 U	1 U	0.1 JX	1 U
Bromochloromethane -/C	1			1 U	1 U	<u> 1U</u>	<u> 1 U</u>	<u>1 U</u>	<u> 1 U</u>
Naphthalene	5	8	40	0.9 U	0.9 U	1 U	5 U	5 U	5 U
Dilution Factor			į	1.0	1.0	1.0	1.0	1.0	1.0

__ Notes:

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

CRQL - Contract Required Quantitation Limit

PAL Exceedance - ES Exceedance -

⁻ B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

^{-- =} No NR140 ES or PAL established

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

		CRQL	NR140 PAL	NR140 ES	MW-TB03	MW-FB01	MW-TB01	Method Blank 01	Method Blank 16
	Analyte				<u> </u>				
	1,2-Dichlorobenzene	1	60	600	1 U	1 U	1 U	0.1 J	1 U
	1,3-Dichlorobenzene	1	125	1250	1 υ	1 U	1 U	1 U	1 U
	1,4-Dichlorobenzene	1	15	75	1 υ	1 U	1 U	1 U	1 U
	1,1,1-Trichloroethane	1	40	200	1 U	1 U	1 U	1 U	1 U
-	1,1,2,2-Tetrachloroethane	1	0.02	0.2	1 U	1 U	1 U	10	1 U
	1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	1 U	1 U	1 U
	1,1-Dichloroethane	1	85	850	1 U	1 U	1 U	1 U	1 U
	1,1-Dichloroethene	1	0.7	_ 7	1 U	1 U	1 U	1 U	1 U
_	1,2-Dibromo-3-chloropropane	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U
	1,2-Dibromoethane	1	0.005	0.05	1 U	1 U	1 U	1 U	1 U
	1,2-Dichloroethane	1	0.5	5	1 U	1 U	1 U	1 U	1 U
	1,2-Dichloropropane	1	0.5	5	1 U	1 U	1 U	1 U	1 U
	2-Butanone	5	90	460	5 U	5 U	5 U	5 U	5 U
	2-Hexanone	5			5 U	5 U	5 U	1 J	5 U
	4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U	0.8 J	5 U
	Acetone	5	200	1000	3 J	7	4 J	5 U	5 U
	Benzene	1	0.5	5	1 U	10	1 U	1 U	1 U
	Bromodichloromethane	1	0.06	0.6	1 U	1 U	1 U	1 U	1 U
	Bromoform	1	0.44	4.4	1 U	1 U	1 U	1 U	1 U
	Bromomethane	1	1	10	1 U	1 U	_ 1 U	1 U	1U
	Carbon Disulfide	1	-		1 U	1 U	1 U	1 U	1 U
	Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U	1 U	1 U
_	Chlorobenzene	1	20	200	1 U	1 U	1 U	1 U	1 U
	Chloroethane	1	80	400	3 U	_ 1 U	_1 U	1 U	1 U
	Chloroform	1	0.6	6	3 U	1 U	1 U	1 Ú	1 U
	Chloromethane	1	0.3	3	1 U	0.4 J	0.5 J	1 U	1 U
	Cis-1,2-Dichloroethene	1	7	70	1 U	1 U	1 U	1 U	1 U
	Cis-1-3-Dichloropropene	1	0.02	0.2	10	1 U	_1 U_	1 U	1 U
	Dibromochloromethane	1	6	60	1 U	1 Ú	1 U	1 U	1 U
-	Ethylbenzene	1	140	700	1 U	1 U	1 U	1 U	1 U
	Methylene Chloride	2	0.5	5	8 B	0.2 U	4 U	0.5 J	0.9 J
	Styrene	1	10	100	1 U	1 U	1 U	1 U	1 U
	Tetrachloroethene	1	0.5	5	10	1 Ü	1 U	1 U	1 U
	Toluene	1	68.6	343	0.1 J	0.2 J	1 U	1 U	0.2 J
	Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	1 U	1 U	1 U
	Trans-1-3-Dichloropropene	1	0.02	0.2	1 U	10	1 U	1 U	<u>1 U</u>
	Trichloroethene	1	0.5	5	1 U	1 U	1 U	1 Ü	1 U
	Vinyl Chloride	1	0.02	0.2	3 U	1 U	1 U	1 U	1 U
	Xylene (total)	1	124	620	1 U	1 U	1 U	0.1 JX	0.5 JX
	Bromochloromethane	1			1 U	1 U	1 U	1 U	1 U
	Naphthalene	5	8	40	0.1 U	5 U	5 U	3 J	0.4 J
	Dilution Factor				1.0	1.0	1.0	1.0	1.0

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

ES Exceedance -

Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

		CRQL	NR140 PAL	NR140 ES	Method Blank 17	Method Blank 18	Method Blank 20	Method Blank 36
	Analyte							
	1,2-Dichlorobenzene	1	60	600	1 U	1 U	1 U	1 U
	1,3-Dichlorobenzene	1	125	1250	1 U	1 U	1 U	1 U
	1,4-Dichlorobenzene	1	15	75	1 U	1 U	1 U	1 U
	1,1,1-Trichloroethane	1	40	200	1 U	1 U	1 U	1 U
_	1,1,2,2-Tetrachloroethane	1	0.02	0.2	1 U	1 U	1 U	1 U
	1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	1 U	1 U
	1,1-Dichloroethane	1	85	850	1 U	1 U	1 U	1 U
	1,1-Dichloroethene	1	0.7	7	1 U	1 U	1 U	1 U
_	1,2-Dibromo-3-chloropropane	1	0.02	0.2	1 U	1 U	1 U	1 U
	1,2-Dibromoethane	1	0.005	0.05	1 U	1 U	1 U	1 U
	1,2-Dichloroethane	1	0.5	5	1 U	1 U	1 U	1 U
	1,2-Dichloropropane	1	0.5	5	1 U	1 U	1 U	1 U
	2-Butanone	5	90	460	5 U	5 U	5 U	5 U
	2-Hexanone	5			5 U	5 U	5 U	5 U
	4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U	5 U
_	Acetone	5	200	1000	5 U	5 U	5 U	5 U
	Benzene	1	0.5	5	1 U	1 U	1 U	10
	Bromodichloromethane	1	0.06	0.6	1 U	1 U	1 U	1 U
	Bromoform	1	0.44	4.4	1 U	1 U	1 U	1 U
	Bromomethane	1	1	10	1 U	1 U	1 U	1 U
	Carbon Disulfide	1			1 U	1 U	1 U	1 U
	Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U	1 U
~-	Chlorobenzene	1	20	200	1 U	1 U	1 U	1 Ü
	Chloroethane	1	80	400	1 U	1 U	<u>1 U</u>	1 U
	Chloroform	1	0.6	6	10	1 U	1 U	10
	Chloromethane	1	0.3	3	1 U	1 U	1 U	1 U
	Cis-1,2-Dichloroethene	1	7	70	1 U	1 U	1 U	1 U
	Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1U	1 U	<u>1 U</u>
	Dibromochloromethane	1	6	60	1 U	1 U	1 U	1 U
	Ethylbenzene	1	140	700	[1U	1 U	1 U	1 U
	Methylene Chloride	2	0.5	5	0.9 J	0.7 J	0.2 J	0.3 J
	Styrene	1	10	100	1 U	1 U	1 U	1 U
	Tetrachloroethene	1	0.5	5	1 U	1 U	1 U	1 U
	Toluene	1	68.6	343	1 U	1 U	1 U	1 U
	Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	1 U	1 U
	Trans-1-3-Dichloropropene	1	0.02	0.2	10	1 U	1 U	1 U
	Trichloroethene	1	0.5	5	1 U	1 U	10	1 U
	Vinyl Chloride	1	0.02	0.2	1 U	1 U	1 U	1 U
	Xylene (total)	1	124	620	1 U	1 U .	1 U	1 U
_	Bromochloromethane	1			1 U	1 U	1 U	10
	Naphthalene	5	8	40	0.6 J	0.6 J	0.5 J	0.7 J
	Dilution Factor				1.0	1.0	1.0	1.0

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

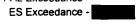


Table 4A
Volatile Organic Compound Concentrations
Groundwater Monitoring Wells
Round 1 Long Term Groundwater Monitoring
Spickler Landfill Site
STS Project No. 84374XA

	CRQL	NR140 PAL	NR140 ES	Method Blank 37	Storage Blank 031596	Storage Blank 031496
Analyte						
1,2-Dichlorobenzene	1	60	600	1 U	1 U	1 U
1,3-Dichlorobenzene	1	125	1250	1 U	1 U	1 U
1,4-Dichlorobenzene	1	15	75	1 υ	1 U	1 U
1,1,1-Trichloroethane	1	40	200	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1	0.02	0.2	1 U	1 U	1 U
1,1,2-Trichloroethane	1	0.5	5	1 U	1 U	1 U
1,1-Dichloroethane	1	85	850	1 U	1 U	1 U
1,1-Dichloroethene	1	0.7	7	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1	0.02	0.2	10	1 U	1 U
1,2-Dibromoethane	1	0.005	0.05	1 U	1 U	1 U
1.2-Dichloroethane	1	0.5	5	1 U	1 U	1 U
1,2-Dichloropropane	1	0.5	5	1 U	1 U	1 U
2-Butanone	5	90	460	5 U	5 U	5 U
2-Hexanone	5			5 U	5 U	5 U
4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U
Acetone	5	200	1000	5 U	5 U	5 U
Benzene	1	0.5	5	1 U	1 U	1 U
Bromodichloromethane	1	0.06	0.6	1 U	1 U	1 U
Bromoform	1	0.44	4.4	1 U	1 U	1 U
Bromomethane	1	1	10	1 U	1 U	1 U
Carbon Disulfide	1			1 U	1 U	1 U
Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U
Chlorobenzene	1	20	200	1 U	1 U	1 U
Chloroethane	1	80	400	1 U	1 U	1 U
Chloroform	1	0.6	6	1 υ	1 U	1 ህ
Chloromethane	1	0.3	3	1 U	1 U	1 U
Cis-1,2-Dichloroethene	1	7	70	1 U	1 U	1 U
Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U
Dibromochloromethane	1	6	60	1 U	1 U	1 U
Ethylbenzene	1	140	700	1 U	1 U	1 U
Methylene Chloride	2	0.5	5	0.4 J	1 BJ	0.9 BJ
Styrene	1	10	100	1 U	1 U	1 U
Tetrachloroethene	1	0.5	5	1 U	1 U	1 U
Toluene	1	68.6	343	1 U	0.2 J	0.2 J
Trans-1-2-Dichloroethene	1	20	100	1 U	1 U	1 U
Trans-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U
Trichloroethene	1	0.5	5	1 U	1 U	1 U
Vinyl Chloride	1	0.02	0.2	∥ 1U	1 U	1 U
Xylene (total)	1	124	620	0.1 JX	0.6 JX	0.6 JX
Bromochloromethane	1			1 ป	1 U	1 U
Naphthalene	5	8	40	1 J	0.2 BJ	0.3 BJ
Dilution Factor				1.0	1.0	1.0

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

k:84374XA/T574A004.xls/JAK-ns

CRQL - Contract Required Quantitation Limit

X = Concentration of total xylene. Isomer(s) not identified.

D = Concentration determined on a diluted sample.

PAL Exceedance -

Table 4B **Volatile Organic Compound Concentrations Residential Wells Round 1 Long Term Groundwater Monitoring** Spickler Landfill Site STS Project No. 84374XA

Analyte_right 1,2-Dichlorobenzene		CROL	NR140 PAL	NR140 ES	RW-TB01	RW-2543	RW-2543 (Dupe)	RW-2551	RW-FB01
1,3-Dichlorobenzene 1 125 1250 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	<u>Analyte, برg/l</u>								
1.4-Dichlorobenzene	•						· -		
1,1,1-Trichloroethane	•		·					_	
1,1,2,2-Tetrachioroethane			-				· -		
1,1,2-Trichloroethane									
1.1-Dichloroethane		-			, -		• =		=
1.1-Dichloroethene	• •				· ·				
1,2-Dibromo-3-chloropropane	1,1-Dichloroethane								-
1,2-Dibromoethane									
1,2-Dichloroethane	1,2-Dibromo-3-chloropropane			-	1				1 U
1.2-Dichloropropane	1,2-Dibromoethane	1	0.005	0.05	1 U		1 U	1 U	1 U
2-Butanone 5 90 460 5 U 5 U 5 U 5 U 4 J 2-Hexanone 5 - - 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U<	1,2-Dichloroethane	1	0.5	5	it	1 ป	1 U	1 U	1 U
2-Hexanone 5 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U	1,2-Dichloropropane		0.5	5	1 U				1 U
A-Methyl-2-Pentanone (MIBK) 5 50 500 500 5 U 5 U 5 U 5 U 5 U 7	2-Butanone		90	460	5 U	5 U	5 U		4 J
Acetone	2-Hexanone	5			5 U	5 U			5 U
Benzene	4-Methyl-2-Pentanone (MIBK)	5	50	500	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	Acetone	5	200	1000	3 J	5 U	3 U	5 U	7
Bromoform	Benzene	1	0.5	5	1 U	1 U	1.U	1 U	1 U
Bromomethane	Bromodichloromethane	1	0.06	0.6	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide 1 1 U 1U	Bromoform	1	0.44	4.4	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride 1 0.5 5 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Bromomethane	1	1	10	1 U	1 U	1 U	1 U	1 U
Chlorobenzene 1 20 200 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Carbon Disulfide	1		-	1 U	1 U	1 U	1 U	1 U
Chloroethane 1 80 400 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1	Carbon Tetrachloride	1	0.5	5	1 U	1 U	1 U	1 U	1 U
Chloroform 1 0.6 6 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U<	Chlorobenzene	1	20	200	1 U	1 U	1 U	1 U	1 U
Chloromethane 1 0.3 3 0.5 U 0.6 U 1 U 0.8 U Cis-1,2-Dichloroethene 1 7 70 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U<	Chloroethane	1	80	400	1 U	1 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene 1 7 70 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Chloroform	1	0.6	6		1 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene 1 7 70 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Chloromethane	1	0.3	3	0.5 J	0.6 U	1 U	0.8 U	0.80
Dibromochloromethane 1 6 60 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Cis-1,2-Dichloroethene	1	7	70		1 U	1 U	1 U	1 U
Ethylbenzene 1 140 700 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Cis-1-3-Dichloropropene	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U
Methylene Chloride 2 0.5 5 0.5 U 0.2 U 0.3 U 0.2 U 0.3 U Styrene 1 10 100 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Dibromochloromethane	1	6	60	1 Ü	1 U	· 1U	1 U	1 U
Styrene 1 10 100 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U <td>Ethylbenzene</td> <td>1</td> <td>140</td> <td>700</td> <td>1 U</td> <td>1 U</td> <td>1 U</td> <td>1 U</td> <td>1 U</td>	Ethylbenzene	1	140	700	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene 1 0.5 5 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U <	Methylene Chloride	2	0.5	5	0.5 U	0.2 U	0.3 U	0.2 U	0.3 U
Toluene 1 68.6 343 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U<	Styrene	1_	10	100	1 U	1 U	1 U	1 U	1 U
Trans-1,2-Dichloroethene 1 20 100 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U	Tetrachloroethene	1	0.5	5	1 U	1 U	1 U	1 U	1 Ü
Trans-1,3-Dichloropropene 1 0.02 0.2 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U <td>Toluene</td> <td>1</td> <td>68.6</td> <td>343</td> <td>1 U</td> <td>1 U</td> <td>1 U</td> <td>1 U</td> <td>0.2 J</td>	Toluene	1	68.6	343	1 U	1 U	1 U	1 U	0.2 J
Trichloroethene 1 0.5 5 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U <th< td=""><td>Trans-1,2-Dichloroethene</td><td>1</td><td>20</td><td>100</td><td>1 U</td><td>1 U</td><td>1 U</td><td>1 U</td><td>1 U</td></th<>	Trans-1,2-Dichloroethene	1	20	100	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride 1 0.02 0.2 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U <	Trans-1,3-Dichloropropene	1	0.02	0.2	1 U		1 U	1 U	1 U
Xylene (total) 1 124 620 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U <t< td=""><td>Trichloroethene</td><td>1</td><td>0.5</td><td>5</td><td>1 U</td><td>1 U</td><td>1 U</td><td>1 U</td><td>1 U</td></t<>	Trichloroethene	1	0.5	5	1 U	1 U	1 U	1 U	1 U
Bromochloromethane 1 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 1 U 5 U 5 U 5 U 5 U 5 U 5 U	Vinyl Chloride	1	0.02	0.2	1 U	1 U	1 U	1 U	1 U
Naphthalene 5 8 40 5 U 5 U 5 U 5 U	Xylene (total)	1	124	620	1 U	1 U	1 U	1 U	1 U
, ,	•	1			1 U	1 U	1 U	1 U	1 U
Dilution Factor 1.0 1.0 1.0 1.0 1.0	Naphthalene	5	8	40	5 U	5 U	5 U	5 U	5 U
	Dilution Factor				1.0	1.0	1.0	1.0	1.0

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

B = compound also detected in associated blank

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

ES Exceedance -

k:84374XA/T574A004.xls/JAK-ns Page 1 of 1

	CRQL	NR140 PAL	NR140 ES	MW-6D	<u>MW-6S</u>	<u>MW-7D</u>	MW-7S	MW-10S	MW-11S	MW-13D	MW-13S
Analyte, µg/l			ŀ								
bis(2-Ethylhexyl)Phthalate	10	0.6	6	12 U	0.8 U	0.9 U	2 U	3 U	2 U	1 U	1 U
Di-n-Butylphthalate	10		[]	0.5 U	0.7 U	0.4 U	0.5 U	0.7 U	0.6 U	1 U	0.7 U
Diethylphthalate	10			10 U	10 U	10 U	10 U	0.3 J	0.5 J	10 U	0.3 U
• •			ł								

Notes:

Samples collected in March 1996

Units in µg/L

U = compound not detected above concentration listed

- J = compound detected, but below contract required quantitation limit
- -- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

* - Monitoring Well MW-S1 did not contain sufficient water to sample for phthalates.

PAL Exceedance - ES Exceedance -

		MW-13S (dupe)								
	CRQL	NR140 PAL	NR140 ES	MW-13S (dupe)	Reanalysis	MW-14S	MW-15D	MW-15S	MW-19D	MW-19S
<u>Analyte, μg/l</u>					·					
bis(2-Ethylhexyl)Phthalate	10	0.6	6	0.9 U	1 U	0.8 U	9 U	2 U	2 U	0.5 U
Di-n-Butylphthalate	10			0.2 U	0.3 U	0.5 U	1 U	1 U	0.6 U	0.5 U
Diethylphthalate	10			10 U	0.3 J	10 U	10 U	0.7 U	10 U	10 U

Notes:

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

- J = compound detected, but below contract required quantitation limit
- -- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

* - Monitoring Well MW-S1 did not contain sufficient water to sample for phthalates.

PAL Exceedance - ES Exceedance -

	CRQL	NR140 PAL	NR140 ES	MW-19S (dupe)	MW-20S	MW-S1*	MW-S1A	MW-S1AR	MW-S2	MW-S2A	MW-S2AR
Analyte, µg/l											
bis(2-Ethylhexyl)Phthalate	10	0.6	6	0.9 U	0.9 U		6 U	5 U	6 U	2 U	2 U
Di-n-Butylphthalate	10			0.6 U	0.5 U		0.7 U	0.7 U	0.6 U	0.5 U	2 U
Diethylphthalate	10			10 U	10 U		0.6 J	2 J	10 U	10 U	0.2 J

Notes:

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

J = compound detected, but below contract required quantitation limit

-- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

* - Monitoring Well MW-S1 did not contain sufficient water to sample for phthalates.

PAL Exceedance - ES Exceedance -

k:84374XA/T574A002.xls/JAK-ns Page 3 of 5

	CRQL	NR140 PAL	NR140 ES	MW-S3	MW-S3A	MW-S3A (dupe)	MW-S3AR	MW-FB02	MW-FB03	MW-FB01
Analyte, μg/l			Į.							
bis(2-Ethylhexyl)Phthalate	10	0.6	6	8 U	5 U	7 U	26 B	0.8 BJ	2 BJ	10 U
Di-n-Butylphthalate	10			0.5 U	0.5 U	0.9 U	0.7 U	0.7 BJ	0.7 J	10 U
Diethylphthalate	10			0.5 J	0.5 J	0.6 J	0.6 J	10 U	10 U	10 U

Notes:

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

- J = compound detected, but below contract required quantitation limit
- -- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

* - Monitoring Well MW-S1 did not contain sufficient water to sample for phthalates.

PAL Exceedance - ES Exceedance -

k:84374XA/T574A001.xls/JAK-ns Page 4 of 5

	CRQL	NR140 PAL	NR140 ES	Method Blank 10	Method Blank 12	Method Blank 18	Method Blank 38
<u>Analyte, μg/l</u>				:			
bis(2-Ethylhexyl)Phthalate	10	0.6	6	2 J	2 J	2 J	4 J
Di-n-Butylphthalate	10			0.5 J	0.9 J	10 U	0.5 J
Diethylphthalate	10			0.3 J	10 U	10 U	10 U

Notes:

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

- J = compound detected, but below contract required quantitation limit
- -- = No NR140 ES or PAL established

CRQL - Contract Required Quantitation Limit

* - Monitoring Well MW-S1 did not contain sufficient water to sample for phthalates.

PAL Exceedance - ES Exceedance -

k:84374XA/T574A001.xls/JAK-ns Page 5 of 5

	CRQL	NR140 PAL	NR140 ES	RW-2543	RW-2543 (dupe)	RW-2551	RW-FB01
<u>Analyte. μg/l</u>							
bis(2-Ethylhexyl)Phthalate	10	0.6	6	10 U	0.6 U	2 U	3 U
Di-n-Butylphthalate	10			0.5 U	0.4 U	0.6 U	0.5 U
Diethylphthalate	10			10 U	10 U	10 U	10 U
			ı				

Notes:

Samples collected in March 1996

Units in μ g/L

U = compound not detected above concentration listed

-- = No NR140 ES or PAL established

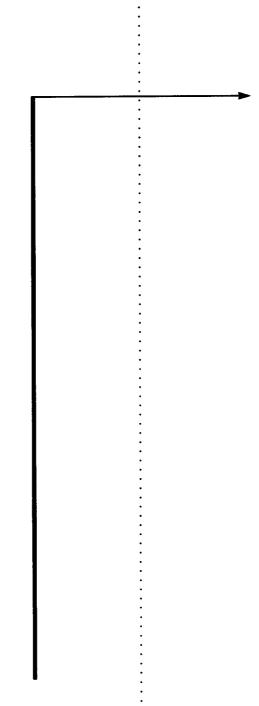
CRQL - Contract Required Quantitation Limit

ES Exceedance -

APPENDIX

LIST OF APPENDICES

Appendix A - Field Sampling Sheets Appendix B - Chain-of-Custody Forms Appendix C - HES Case Narrative **A**



APPENDIX A

Field Sampling Sheets

STS Geo-Environmental Group Field Report



		Project No.	84374×A
Spici	cler LF	Day/Data M	on 3/11/96
	IW WI	Weather/Temp.	
Contractor		Client Wey	
Equipment	Arrive Job 10:00	·.	
Rental	Depart Job 4:30	TOTAL	<u></u>
Tolls \$	Total Hours 6.5	CHARGEABLE HOURS	11.5
Parking \$	on Job		1 11.5
Mileage	Travel Time 4.0		L
immary of Technical and/or Engineer	ing Services Performed, Including Field Tel	it Data. Locations, Elevation	s and Depths are Estima
collected water	levels from all we	115 on site	except for
	which were not los		
	wells on site, Depth		
	red with a water leve		
	¿ due to Snow COV		
			ue115 135,6
S-3. Well S-1 W	e monitored in 10 G	centrations of	% chy, co
_	th CA-90 Infared	gas detector.	
_	ith CA-90 Infared	gas detector.	
_	ith CA-90 Infared;	gas detector.	
_	ith CA-90 Infared	jas detector.	
_	ith CA-90 Infared	jas detector.	
_	ith CA-90 Infared	gas detector.	
_	Th CA-90 Infared		
_	Th CA-90 Infarect		
_	Th CA-90 Infared		
Were Measured w	in CA-90 Infarec		
Were Measured w			•
CFIeld Test Data is Estimated			
CFIeld Test Data is Estimated	Site Sketch: Indic		•
CFleid Test Data is Estimated Pending Final Laboratory Test Resul	its. Site Sketch: Indic		

Spickler

WATER LEVEL DATA SHEET

Project: Spickle LF

Project No.:

baerver: Dem Veather: 30 5 OVECOST Date: 30119

Type Vater Level Indicator Used: Slope Indicator 1.D. No. 3088

and the second	Clock	ASING	asing Top	The state of the s	Depth To	Vater	Calculation of the said	
Vell/Plex.	Clock Si	ick-Up	Elev.	Vater	Not com	Slev.	CHERKS	
	THE P	I A MAIN	er and an area		2172	C. Market		
がいる。	5 TO S	Now Cons		5.43	SK IS I SK			
1-1 D	PART S	N/A PA		7,29	62:25	A COMMITTEE		X
14.5	5	nouicour			26.19			
15/05	S.	West.			27.45	The sale of the sale of		13
15 D		now Carly			72.73	EST MAN VALUE	KARATA A	
185	THE S	new Corre			26.36			
& S		rey Colu	A Control		28.14.			1
		No. Test			62:15			
KD	E	200		19.43	8.45			L
123		Starten			27:70			
. 16 5		na cove			20.90			
11/2/		new Colle			20.54			
8s*	ALAGE	Willes	k W. M.	Name and Address of the Owner, where the Owner, which is the Owner, where the Owner, which is	22.52			1
.8D				32.82	47:63			
10°	A NAME OF	new Cottle		29.28	62:30		THE NAME OF STREET	
175		noulow		20.16	24105			
00	4 4 4	Non Colt	F-W-WI	32.99	62.50			
163°	E E	Snowcok	L TANK	6.78	20.70			

-Note reference point used if not top of PVC riser casing:

AND COMPANY OF THE PROPERTY OF

Spickler

32

WATER LEVEL DATA SHEET

roject: Project No.

Observer: 30 S OVECCOT Date: 30 S

Type Vater Level Indicator Used: Slope Indicator I.D. No. 1888

TALL PLANS		A. Same		TO GOLD AND AND AND AND AND AND AND AND AND AN		
Vell/Plez.	Clock Casing	Casing Top	Depth To	Depth To	Vater	MARKET KS
Number	Clock Casing Fine Stick-V	Elev.	Reti)	an (tom	Fig. 1	
1533				20.32		
18-3A	The Show Sale	The second secon	17.80	83.76		
957	FINE SALES		16.70	28.8		
130	Snou GN	A VENT	16.92	62.75	-	
135						
SAA	TENST'S	M. Asset	1'C.14	23:59.		
523	Tunsal C			12.05		and the state of t
ISKS L			115.28	18.61		
MARIO			35.98	52.05	- 204	
MA B	建一种的		8.81	女下10		
LH8.			17.86	24.15		
LHO	際によった公		16.05	20.28	t en	
LHq	13.90		でる	11.42		
に称写			Dan	and	1.273	
LH	学に生物を開業		临河山	7:00	1 434	
	PUIL					医的人 強性
	R.J.					Blaise i
	多 图 3 图	\$ 1 MAX	F-48-	V PUR		

Note reference point used if not top of PVC riser casing:

STS Geo-Environmental Group Field Report



		Project No. 84374 ×A
Project Spickler	if	Day/Date Tues 3/12/96
Spencer	w I	Weather/Temp. 50'S PHy Chuck
Contractor		Ctions Wey Lans
Equipment	Arrive Job 7:00	
Rental	Depart Job 5:30	TOTAL
Tolle \$		CHARGEABLE 10.5
Parking \$	Total Hours 10.5	
Mileage	Lab Time	
	Travel Time	
furmary of Technical and/or Engineering S	Services Performed, Including Field Test Da	ita. Locations, Elevations and Depths are Estimated
Pursued & Sampled 7	re Following wells: 205	5, 145 155, 135+ Dipe
	9D 1957Dupe FB	
		se four well volumes Fun
		let to recharge Prior to
		VIals, 2-le Ambre no pres
,	_	lkcted. FBOI was complet
with Store bought D	15thles Wate.	2 1 2 2 5 5 6
		eachese collection System.
		recorded in field book Along
with observations of	color, odor & Turbidi-	<i>'</i> 3.
	red on I ce After	
ESE OVErsight	representative on site	•
	<u> </u>	
*CField Test Data is Estimated Pending Final Laboratory Test Results.	Site Sketch: Indicate	North
Pending Final Laboratory Test Results.		Nonn
Pending Final Laboratory Test Results. Field Representative		North
		North Mala17.

water X 0.12)+0	Replaced?
(from TPVC) (from TPVC)	(in bailer/by I—Pro
water X 0.12)+0	.061 X 29.9 For 2*
	OR1 X 748 For 2"
_	able Bailer
ed: <u>8:36</u> thod: <u>Dis</u>	
	-
VOCs− 3 #/3 Metals− 1 - €	Size Preservative Hel Hoos neters NONE 2
	Samples Collec VOCs- 3-4

Project Name: Spr	ckler LF	Job No.:	84 374 x A
Location: S	Pencer WI	Tester:	Dum
Well Number:	145	Date Sampled: .	3/12/96
Previous Well Sampled	i:		
BENERAL CONDITIONS	:		
	NIA Show corr		
Surface Seal:	Dumagea	141133111g	
Protector Pipe:	Ok) Damaged	Missing:	Donlors do
Nell Cap: Temperature:	Damaged 30 S - 40	Missing: If Missing	неріасес?
remperature.		Clear Cloudy Rain	
WELL DATA:			
Magazzina Davisas	Mscope		
Measuring Device: Stick Up or Down:	MIA Snow Cov	Isred (from Groun	d Surface)
Depth to Water:		(from TPVC)	
Depth to Bottom:	26.91	(from TPVC)	
_ength of Water:	15.20	· · · · · · · · · · · · · · · · · · ·	
Free Product Observe	d: yes/po Thick	kness: NIA	(in bailer/by I—Probe)
		•	
RGING/SAMPLING:			
Well Purging Calculati			0.061 X 29.9 For 2° well
	10 Well Volumes: [0]	ength of water X 0.12)+	0.061 X 74.8 For 2° well
_		_	
Purging Device: 立	Spasable Beiler Sampli	ng Device: Dispos	able Boiler
_Volume Required:	30 gallans	•	
		Level After:	
Could Well Bail Dry?	yes (ac)		
	. 9.46	9:35	
Purging - Time Star		Time Ended: 9:30	
Total Time Spent Pu	· · · · · · · · · · · · · · · · · · ·	210	
Decon Method: 0	Cleaned in office/Field (Decon Method: Di	590Sable
·			
IN-SITU TESTING:			
IN-SITU TESTING:			
Tubidity: clear	(turbid) opaque	Samples Colle	cted
Odor:	none		/Size Preservatives
Color:li	ght Brown	**************************************	10 mc Itel
эH:1.9	<u> </u>	Mercis	e HNU3
Uncorrected Conduct		Indicator Para	
nter Temp. (from (Cond.) 7.9	Indicator Para	imeters 1-2 112 6 4
Lomments			
		106 Corrected Co	ad unhallem
		106 Corrected Co	nd unhoslem
		106 Corrected Co	nd unhoslem

_	Project Name: Spickler Location: Spencer with Well Number: 155 Previous Well Sampled: Job No.: 84374xA Tester: Ocm Date Sampled: 3/12/96
	Surface Seal: OK Damaged Missing:
	WELL DATA: Measuring Device:
	PURGING/SAMPLING: Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.081 X 29.9 For 2° well 10 Well Volumes: [(length of water X 0.12)+0.081 X 74.8 For 2° well Purging Device:
- - - [Decon Method: Cleaned in office/Field Decon Method: Discosable IN-SITU TESTING:
-	Tubidity: clear turbid opaque Odor: #/Size Preservatives Color: 1:9h+ Red VOCs- 340n C Hel PH: (.26 © 6.7 °C Metals- 1-l HN03 Uncorrected Conductivity: 99 x 1 Indicator Parameters NONF 2-l Water Temp. (from Cond.) 7.0 Indicator Parameters 1-l neoH Comments (orache Cond 155 unhs) Cm

Project Name: Spickler (F Location: Spence wit Well Number: 135 + Dupe Previous Well Sampled:	Job No.: Tester: Date Sampled: 3/12/96
GENERAL CONDITIONS:	
Surface Seal: Surface Seal: Protector Pipe: Well Cap: Temperature: Snow Cove Damaged Damaged Damaged	Missing: Missing: Missing:If Missing Replaced? Clear Cloudy/Rain
WELL DATA:	
Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: Free Product Observed: M Scope N/A Snow 11.48 23.50 12.02 Thic	(from Ground Surface) (from TPVC) (from TPVC) (from TPVC) (in bailer/by I-Prob
PURGING/SAMPLING:	
Well Purging Calculations: 4 Well Volumes: [(ength of water X 0.12)+0.081 X 29.9 For 2° we length of water X 0.12)+0.061 X 74.8 For 2° we
Volume Required:	Level After:
Total Time Spent Purging: 40 m	Time Ended: 11:25
Decon Method: Cleaned in office/Field	Decon Method: Disposable
IN-SITU TESTING:	
Tubidity: clear turbid opaque Odor: Skight Teacher organic? Color: Light Grey PH: C. 19 @ 9.4 °C Uncorrected Conductivity: 228 x Water Temp. (from Cond.) 9.9 Comments	Samples Collected #/Size Preservatives VOCs- 3-70 nc Hc1 Metals- 1-8 Hv22 Indicator Parameters NONF 2-8 Indicator Parameters 1-8 Na o

	Spickler	Job No.:	84374 xA
Location: _	Spen Cer wI	Tester:	Dim
Well Number: _	130	Date Sampled: .	3/12/96
Previous Well Sar	npied:		
GENERAL CONDIT	ONS:		
Surface Seal:	OK Damaged	Missing:	
Protector Pipe:	04 0	Missing:	
Well Cap:	OK Damaged	Missing: 11 Missing	Replaced?
Temperature:	OK Damaged OK Damaged	Clear Cloudy/Rain	•
WELL DATA:			
Measuring Device	m Scope		
Stick Up or Dow	n: NA Show	(from Ground	d Surface)
Depth to Water:		(from TPVC)	·
Depth to Bottom		(from TPVC)	
Length of Water:	46.33	6) 10	/• • • • • • • • • • • • • • • • • • •
Free Product Ob	served: yes/no Th	ickness: NA	(in bailer/by I—Probe)
	NO.		
PURGING/SAMPLI	NG:		
Well Purging Cald	culations: 4 Well Volumes:	((length of water X 0.12)+	0.061 X 29.9 For 2" well
		((length of water X 0.12)+	
	·	-	
Purging Device:	Discosable som	pling Device: Dispe	Sable Baile
Volume Required	25 gallons	pling bevice.	334.5
Volume Purged:	25 gallons 25 Wate	r Level After:	
Could Well Bail			
Purging - Time	Start: 10:45	Time Ended: 11:45	
Total Time Spen	t Purging:		
Dagan Mathada	Cleaned in office/Field	Door William Dis	ed schl
pecon method:	Cleanea in office/Field	Decon Method:	11 - 25
			
IN-SITU TESTING			
INTSHU IESHNG	_		-
Tubidity: Cled	turbid opaque	Samples Collec	<u>cted</u>
Odor:	nore	· ***	Size Preservatives
Color:	Clear		o me Itel
pH:		Metals- 1	
Uncorrected Con		Indicator Paral	
Water Temp. (from Comments	om Cona.)	indicator Paral	Hereiz
Comments	Corr	ecté conz 29 umh	oslen

Project Name: Spickle LF Location: Spencer with Well Number: 150 Previous Well Sampled:	Job No.: Tester: Date Sample	0: 3115146
Surface Seal: Protector Pipe: Well Cap: Temperature: GENERAL CONDITIONS: Show Color Damaged Damaged Damaged VO	Missing: Missing: Missing: Clear/Cloudy/Rai	ing Replaced?
WELL DATA:		
Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: M Scope NIA Snow Cov 20.54 72.73 52.19	(from TP\	
Free Product Observed: yes/10 Th	nickness: NA	(in bailer/by I-Pr
	: [Clength of water X 0.1]	2)+0.081 X 74.8 For 2°
Well Purging Calculations: 4 Well Volumes: 10 Well Volumes: Purging Device: \[\text{Disposable} \text{Sam} \] Volume Required: \[\text{25 gallons} \]	: [(length of water X 0.1	
Well Purging Calculations: 4 Well Volumes: 10 Well Volumes: Purging Device: Volume Required: Volume Purged: Could Well Bail Dry? Purging — Time Start: 10 100	: (Clength of water X 0.1)	2)+0.081 X 74.8 For 2°
Well Purging Calculations: 4 Well Volumes: 10 Well Volumes: Purging Device: Volume Required: Volume Purged: Could Well Bail Dry? Purging — Time Start: 10 100	rime Ended: 10:	2)+0.081 X 74.8 For 2°
Well Purging Calculations: 4 Well Volumes: 10 Well Volumes: Purging Device: Volume Required: Volume Purged: Could Well Bail Dry? Purging — Time Start: Total Time Spent Purging: 50	rime Ended: 10:	2)+0.081 X 74.8 For 2°
Well Purging Calculations: 4 Well Volumes: 10 Well Volumes: Purging Device: Volume Required: Volume Purged: Could Well Bail Dry? Purging — Time Start: Total Time Spent Purging: Decon Method: Cleaned in office/Field	rime Ended: 10:	2)+0.081 X 74.8 For 2° possible Baille 52 Dilected #/Size

_	Project Name: Spickle Job No.: 8437444 Location: Spence Tester: Dum Well Number: US Date Sampled: 3112196 Previous Well Sampled:
_	Surface Seal: OK Damaged Missing: Protector Pipe: OK Damaged Missing: Well Cap: OK Damaged Missing: If Missing Replaced? Temperature: To S Clear/Cloudy/Rain
	WELL DATA: Measuring Device: Scope Stick Up or Down: NA Snow Cover Depth to Water: 13.8% Depth to Bottom: 28.14 Length of Water: 14.26 Free Product Observed: yes/10 Thickness: NA (in bailer/by I-Probe)
	PURGING/SAMPLING: Well Purging Calculations: 4 Well Volumes: ((length of water X 0.12)+0.081 X 29.9 For 2° well 10 Well Volumes: ((length of water X 0.12)+0.081 X 74.8 For 2° well Purging Device: Purging Device: Disposable Sampling Device: Disposable Volume Required: 27 Volume Purged: 27 Water Level After: Could Well Bail Dry? yes 10 Purging — Time Start: 14:45 Time Ended: 15:20 Total Time Spent Purging: 35 Time Ended: Disposable Decon Method: Disposable
	Tubidity: clear curbid opaque Samples Collected

Project Name: Location: Well Number: Previous Well Sam	spencer wit	Job No.: Tester: Date Sampled:	89374×A Dum 3/12/96
GENERAL CONDITION Surface Seal: Protector Pipe: Well Cap: Temperature:	Snow Cov* Snow Cov* Damaged Damaged Damaged	Missing: Missing: Missing:If_Missing Clear/Cloudy/Rain	
Measuring Device: Stick Up or Down Depth to Water: Depth to Bottom: Length of Water: Free Product Obse	8,01 21,10 13,09	(from Ground (from TPVC) (from TPVC)	d Surface) (in bailer/by I—Probe)
- Purging Device:	ulations: 4 Well Volumes: 10 Well Volumes: D: >१०১८Ь७ Sam	(length of water X 0.12)+(c) (length of water X 0.12)+(c)	
Volume Required: Volume Purged: Could Well Bail Di Purging — Time S Total Time Spent Decon Method:	2.5 Wate		0005266
IN-SITU TESTING: — Tubidity: clear Odor: — Color:	turbid opaque	Samples Collect VOCs- 3-44	cted /Size Preservatives
pH:	luctivity: 62 × 10	Indicator Parar	meters 1-2 neoH

Project Name: Spickle LK	Job No.:	84374XA	
Incation: Spencer with	Tester:	DLM	
V : Number: 19 0	Date Sampled: _	3/12/96	
Frevious Well Sampled:			- 144 2 1
CINERAL CONDITIONS:			
Snow Cover		• •	A Maria
Surface Seal: -OK Damaged	Missing:	<u> </u>	
Protector Pipe: OB Damaged	Missing:		
V : Damaged	Missing: If Missing	Replaced?	7
1-mperature: 40	Clear Cloudy Rain		
			- 27 年2年28年1 7-487月5日
			and which grants has
V_ELL DATA:	Expression (Fig. 1)		The Mark I
			•
Measuring Device: m Scape			į
S ck Up or Down: N/A Snow cover		d Surface)	
Depth to Water: 35.98	(from TPVC)		er og Gregoria
Depth to Bottom: 52.05	(from TPVC)		
Lingth of Water:			THEY HA
F⇒e Product Observed: yes/ Thick	ness: NIA	(in bailer/b	y I-Probe)
The second of th	Commence of the second	i. Ormaniki se	
	 Approximation of the control of the co		Company of the Compan
RGING/SAMPLING:			
Well Purging Calculations: 4 Well Volumes: Ille			
10 Well Volumes: [0]	ength of water X 0.12)+(
	Carrier of the company of the Carrier		4000
Pirging Device: Disposable Sampli	Tises	Seble Beile	
	ng Device:	<u> </u>	1 2 2 4 2 2 5
Tallio Hodger and the contract of the contract	Laval Affian		
	Level After:		
Could Well Bail Dry? <u>(yes)</u> no			1000
		B us	
Purging - Time Start: 14:25	Time Ended: 15:15	·	100
	<u>```</u>		
	tina di salah s	. 6 5 4€	1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1
المحادث Cleaned in office/Field المحادث	Decon Method:	Sposabl	
	and the second second second second	1. 1	**************************************
			و چندها مد پارس
IN-SITU TESTING:	. •		1 to
			Salar Maria
T bidity: clear (urbid opaque	Samples Collec	<u>ted</u>	
Odor: none			servatives
Color: light Brown	,,,,,		40
F: <u>5.48 @ 10.5 °C</u>	Metals- 1-4		VU3
Uncorrected Conductivity: 53 × 1	Indicator Parai		VE 2-6
er Temp. (from Cond.)	Indicator Para	meters <u>l</u> -	
mments			& MEOH
			Z MOH
	Corrected Cons	, 74 Umhos	
	Corrected Cons	3 74 Umhos	

_	Project Name: Spickle LF Location: Spencer WE Well Number: FBOI Previous Well Sampled: Date Sampled: 3/12/96
-	Surface Seal: OK Damaged Missing:
-	WELL DATA: Measuring Device: NA Stick Up or Down: (from Ground Surface) Depth to Water: (from TPVC) Depth to Bottom: (from TPVC) Length of Water: (from TPVC)
-	Free Product Observed: yes/no Thickness: (in bailer/by I-Probe)
_ •	PURGING/SAMPLING:
})	Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.08] X 29.9 For 2° well 10 Well Volumes: [(length of water X 0.12)+0.06] X 74.8 For 2° well Purging Device: Volume Required: Volume Purged: Could Well Bail Dry? yes no Purging — Time Start: Time Ended: Total Time Spent Purging:
_	Decon Method: Cleaned in office/Field Decon Method:
	IN-SITU TESTING: Tubidity: Clear turbid opaque Odor:

STS Geo-Environmental Group Field Report



		Project No. 84374×A
Project Spickle	. 1.5	Day/Date 3/13/96 Wed
500-6		Day/Date 50'S Clear
Location		Client Veterchouse
Contractor	Agricu tob 7, 40	ClientClient
Equipment Rental	Arrive Job 5:30	
Tolis \$	Depart Job	TOTAL CHARGEABLE
Parking \$	Total Hours /o.5	HOURS 10.5
Mileage	Lab Time	
	Travel Time	
and the second s		ta. Locations, Elevations and Depths are Estimate
	: 115, 6D, 75, 7D 10	
	13, 2543 Dupe, 255	. <u> </u>
		& with Dispusable Bailer
	were removed unless the	
	vere let to rechase P	
		n be no pres, Y-R HNUZ
		ingle (HNU3) was tilt
ph. cond & Temp.	Were measured and	recorded in fired book
along with obser	votions of Zolar adars	Turbidity.
Well purse we	etr contained in lead	nate collection Sistem
4 Coolers S	hipped to Hazelton Ui	a Dunham Express.
		•
Attempted to locate	Wells SI & SIA - Well	S not Found.
Recorded Panel	rectings from leachase	Collection Statem mai
Panel at 1.ft S	+ HUN 1 5 2.	The state of the s
,		
•		
*☐Field Test Oata is Estimated Pending Final Laboratory Test Result	ts. Site Sketch: Indicate i	North
Field Representative		
Position	$\overline{}$	Maklez
Company		
2 WHITE OFFICE • YELLOW TIME CAR	ID • WHITE FIELD	STS Consultants, Ltd.

Project Name: _ Location: _ Well Number: _ Previous Well Sar	Spencer FB02				DUM 3/13/96	
GENERAL CONDITI	ONS:	1/x	Į			
Surface Seal: Protector Pipe: Well Cap: Temperature:	OK	Damaged Damaged Damaged	Missing: Missing: Missing: If M Clear/Cloudy/	lissing R	eplaced?	
WELL DATA:		0/1	Δ			
Measuring Device Stick Up or Dow Depth to Water: Depth to Bottom	n:		(from	TPVC)	Surface)	
Length of Water: Free Product Obs	served: yes	s/no Thic	kness:	((in bailer/by I	-Pi
	culations: 4 W 10 V	Well Volumes: ((length of water X length of water X	0.12)+0.0	061 X 74.8 Foi	r 2°
	culations: 4 W	Well Volumes: ((length of water X	0.12)+0.0	061 X 74.8 For	r 2°
Well Purging Calc Purging Device: Volume Required Volume Purged: Could Well Bail	ory? yes	Well Volumes: ((Sample Mater no	ing Device: Level After: Time Ended:	0.12)+0.0	061 X 74.8 Fo	r 2°
Well Purging Cald Purging Device: Volume Required Volume Purged: Could Well Bail I Purging — Time	ory? yes Start:	Well Volumes: ((Sample mo Water	ing Device: Level After: Time Ended:	0.12)+0.0	061 X 74.8 For	r 2°
Well Purging Calc Purging Device: Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method:	culations: 4 W 10 N	Well Volumes: ((Sample mo Water	ing Device: Level After: Time Ended:	0.12)+0.0	061 X 74.8 For	r 2°
Purging Device: Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Qeo Odor: Color:	culations: 4 W 10 V	Sample Sample Water no Sample	ing Device: Level After: Time Ended: Decon Method: Samples VOCs- Metals- Indicator	2-4/Si 7-4 Parame	ed ize Present House House ters NONE eters 1	vati

_	Project Name: Spicku CF Location: Spencer Well Number: 70 Previous Well Sampled: 3/13/94 Previous Well Sampled:
_	Surface Seal: QK Damaged Missing: Protector Pipe: OK Damaged Missing: Well Cap: OK Damaged Missing: If Missing Replaced? Temperature: 40.5
- [WELL DATA: Measuring Device: Measuring Device: Stick Up or Down: NIA Snow Cover (from Ground Surface) Depth to Water: 29.28 (from TPVC) Depth to Bottom: 62.30 (from TPVC) Length of Water: 33.02 Free Product Observed: yes/gro Thickness: NIA (in bailer/by I-Probe)
	PURGING/SAMPLING: Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.08] X 29.9 For 2" well 10 Well Volumes: [(length of water X 0.12)+0.08] X 74.8 For 2" well Purging Device: Volume Required: 25 Volume Purged: 25 Volume Purged: 25 Volume Purged: 45 Purging — Time Start: 10:05 Time Ended: 10:50 Decon Method: Cleaned in office/Field Decon Method: 15.50
	IN-SITU TESTING: Tubidity: Clear turbid opaque Samples Collected Odor:

-	Project Name: Sp:(kler Job No.: 34374xA Location: Spencer ws Tester: Dum Well Number: 105 Date Sampled: 3/13/96 Previous Well Sampled:
-	Surface Seal: OK Damaged Missing:
- {	WELL DATA: Measuring Device:
	PURGING/SAMPLING: Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.06] X 29.9 For 2° well 10 Well Volumes: [(length of water X 0.12)+0.06] X 74.8 For 2° well Purging Device: Purging Device: Dispose by Sampling Device: Dispose by Sampling Device: Volume Required: 28 gallons Volume Purged: Water Level After: Could Well Bail Dry? yes 10 Purging — Time Start: 8:10 Time Ended: 9:70 Total Time Spent Purging: 1 br 30 min Decon Method: Cleaned in office/Field Decon Method: Dispose by
ו 	IN-SITU TESTING:
_	Tubidity: Clear turbid opaque Odor:
/	1 13 COPPETE CONE UNHOS/CM. MS/80SD Extra 6 40-me Her Viols 1 P MNUZ 1 - C NaoH 2 E Ambre

Project Name: _ Location: _ Well Number: _ Previous Well Sar	Spickler Spence with 75 mpled:	Job No.: Tester: Date Sampled:	84374xA Dem 3/13/96
GENERAL CONDITION Surface Seal: Protector Pipe: Well Cap: Temperature:	Srow 2011- OK Damaged OK Damaged OK Damaged	Missing: Missing: Missing: If Missing Clear/Cloudy/Rain	
MELL DATA: Measuring Device Stick Up or Down Depth to Water: Depth to Bottom Length of Water: Free Product Obs	7: N/A Snow 20.16 24.05 3.89	(from TPVC)	d Surface) (in bailer/by I-Probe)
Purging Device: Volume Required: Volume Purged: Could Well Bail (Purging — Time Total Time Spen	culations: 4 Well Volumes: 10 Well Volumes: Discosclu 15 gallens 2.0 Wate	cliength of water X 0.12)+0 pling Device: True Level After: Time Ended: 10:20	0.061 X 74.8 For 2° well
IN-SITU TESTING: Tubidity: cled Odor: Color: pH: 5 Uncorrected Con Water Temp. (fro	Brown 12 @ 11.0 °C ductivity: 99 × 1	VOCs- Metals- Indicator Parameter Indicator Parameter Indicator Parameter	Size Preservatives

	Project Name: _	Spickle	Job No.:	84374xA
	Location:	Spencer	Tester:	OLM
~ -	Well Number: _ Previous Well Sa	<u>60</u>	Date Sampled: _	3/13/96
,-	Frevious Well 30	mplea:		
	GENERAL CONDIT		N Cove	
	Surface Seal:	OK Damag		
	Protector Pipe:	OK Damag	ed Missing:	
_	Well Cap:	OK) Damag	ed Missing: If Missing	Replaced?
ļ	Temperature:	40.5	Clear/Cloudy/Rain	
				· · · · · · · · · · · · · · · · · · ·
- [WELL DATA:			
	Measuring Device	: Mscop	e	
_	Stick Up or Dow	n: NIA Soc	COVE (from Ground	d Surface)
	Depth to Water:		(1.011.1.1.)	•
Ì	Depth to Bottom			
~	Length of Water: Free Product Ob			(in hailan/haal Dala)
L	Tree Froduct Ob	served: yes/no	Inickness: ININ	(in bailer/by I—Probe)
-			<u> </u>	
'	PURGING/SAMPLI	NG:		
1	Well Purging Cal	culations: 4 Well Volum	nes: [(length of water X 0.12)+(0.061 X 29.9 For 2° well
Ì			nes: [(length of water X 0.12)+(
		•	_	
	Purging Device:	Disposable Bailes	_	osable Baill
	Volume Required	Disposable Bailus	_	
_	Volume Required Volume Purged:	: 25 25	_	
_	Volume Required	: <u>25</u> 25	Sampling Device: <u>Disp</u>	
)	Volume Required Volume Purged: Could Well Bail	1:	Sampling Device: <u>Disp</u> e	
)	Volume Required Volume Purged: Could Well Bail Purging — Time	1:	Sampling Device:	
)	Volume Required Volume Purged: Could Well Bail Purging — Time	Dry? yes no	Sampling Device:	o Sable Baile
	Volume Required Volume Purged: Could Well Bail Purging — Time	1:	Sampling Device:	
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen	1:	Sampling Device:	o Sable Baile
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen	1:	Sampling Device:	o Sable Baile
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method:	Start: 8:30 t Purging: Cleaned in office/I	Sampling Device:	o Sable Baile
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen	Start: 8:30 t Purging: Cleaned in office/I	Sampling Device:	o Sable Baile
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING	Start: 8:30 Cleaned in office/I	Sampling Device:	Sposabb
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clean Odor:	Start: 8:30 Start: 8:30 Cleaned in office/I	Sampling Device:	Sposabb Sted Size Preservatives
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clean Odor: Color:	Start: 8:30 Start: 8:30 t Purging: Cleaned in office/I	Sampling Device:	Sposabb Sted Size Preservatives Hel
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clean Odor: Color: pH:	Start: 8:30 Start: 8:30 It Purging: Cleaned in office/I	Sampling Device:	Sposabb Sted Size Preservatives Hel
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clea Odor: Color: pH: Uncorrected Cor	Start: 8:30 Start: 8:30 It Purging: Cleaned in office/I	Sampling Device:	Sposable Sted Size Preservatives Hel HN03 neters NONE 2-R
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clean Odor: Color: pH:	Start: 8:30 Start: 8:30 It Purging: Cleaned in office/I	Sampling Device:	Sposable Sted Size Preservatives Hel HN03 neters NONE 2-R
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clea Odor: Color: pH: Uncorrected Cor Water Temp. (fr	Start: 8:30 Start: 8:30 It Purging: Cleaned in office/I	Sampling Device:	Sposabb Sted Size Preservatives Hel HN03 neters NONE 2-R neters 1.2 noch
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clea Odor: Color: pH: Uncorrected Cor Water Temp. (fr	Start: 8:30 Start: 8:30 It Purging: Cleaned in office/I	Sampling Device: Dispersion Nater Level After: Time Ended: 10:00 Time Ended: 10:00 Tield Decon Method: D: Tield Decon Meth	Sposabb Sted Size Preservatives Hel HN03 neters NONE 2-R neters 1.2 noch
	Volume Required Volume Purged: Could Well Bail Purging — Time Total Time Spen Decon Method: IN-SITU TESTING Tubidity: Clea Odor: Color: pH: Uncorrected Cor Water Temp. (fr	Start: 25 Dry? yes no Start: 8:30 It Purging: Cleaned in office/I turbid opaque cleaned opaque cleaned opaque cleaned opaque	Sampling Device: Dispersion Nater Level After: Time Ended: 10:00 Time Ended: 10:00 Tield Decon Method: D: Tield Decon Meth	Sposabb Sted Size Preservatives Hel HN03 neters NONE 2-R neters 1.2 noch

SPICKLER LANDFILL SITE RESIDENTAL WELL SAMPLING SHEET

Project Name:	Spickle L	=	Job No.:	44768
Location:	2551 + n	simso	Tester: Date Sampled	Ber Dem Bracon
Previous Sampling				
GENERAL CONDITION)NS:			
Sampling location		k): <u>007</u>	Side TAP	
Temperature:	<u> </u>		lear/Cloudy/Rain	
SAMPLING:				
		. Sá	moles Cállected	
Sampling Dévice:	A P		Cs- 3-70 m	Preservatives
Volume Required:	Company of the second	Me	tals— Parameter	HNOT
	5 ~ 12	PV/SC Inc	licator Pārameter	
N-SITU TESTING			20 5, 57	
Tubidity: clear		opaque C		
	Cear	· · · · · · · · · · · · · · · · · · ·		
H:	uctivity:	84 × 16		
	on Application (Application)		g om de litter flysland frie	
	eng wege in a second of the	14 11 18 18 18 18 18 18 18 18 18 18 18 18		A Section of the Sect
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	esation of the second	ag et al. Million Magneticity (f. 1885). 1908 - Hilliam Santy (f. 1885).		The second of th
<u> </u>	*	्राप्त के अर्थ के अर्थ के प्राप्त के	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

Fill out the entire for the senter of the se RESIDENTAL WELL SAMPLING SHEET

Project Name:	Spickler Spickler			4X 17578	
Well Number:	2543 + p-pe	-0.5	Date Sampled	5/13/96	** ***********************************
Previous Sampling	Point:	Analysis of the second			
GENERAL CONDITIO	INS:				1
Sampling location		Sil Tuok	TAP		
The State of the S	A PART OF THE PART	Court de constantillant Pris	and belong the property of the contract of		10.00
Temperature:	402	(Ge	gr/Cloudy/Rain		
	·····································		· "我们是一个一个		
SAMPLING:			Kanada kanada da kan Kanada kanada da kan		.
					*** #K
		Sårr	ples Callected		
	不是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个		#/Size	Preservati	
Sampling Device:	A STATE OF THE STA	VOC Meto			
Volume Required:	Smin pur	ニー・ガングリング いっとかせい はんしょう	ator Parameter	21 Stratisty CO . Day	
		Indic	ator Părametei		en
			MINT THE STATE OF		
	31 11.40	1145 Dupe			A Pi
			Market Street		
 HATHART OF EACH MADE TO THE COLUMN 					
					TANK TEAN
IN-SITU TESTING					
188					
Tubidity: Clear	turbid op	aque			
Tubidity: dear Odor: Color:	Clear Marie and				
Tubidity: dear Odor: Color: pH:	Clear Hilliams				
Tubidity: clear Odor: Color: pH: Uncorrected Cond	Clear House Clear Control Cont	-c:			
Tubidity: clear Odor: Color: pH: Uncorrected Cond Liquid Temp. (fro	Cleo- luctivity: Cond.)	*C: x /0.1			
Tubidity: dear Odor: Color: pH: Uncorrected Cond Liquid Temp. (from	clea- luctivity: m Cond.)	*C: X 70 1	187 Umms/c		
Tubidity: dear Odor: Color: pH: Uncorrected Cond Liquid Temp. (from	Cleo- luctivity: Cond.)	*C: X 10 1	181 Umms/c		公司 经保险
Tubidity: dear Odor: Color: pH: Uncorrected Cond Liquid Temp. (fro	luctivity:	°C: X /O	487 Umhus/c		is a theory Light terms the room
Tubidity: dear Odor: Color: pH: Uncorrected Cond Liquid Temp. (from Comments	Clear Market Community:	*C: X: 70 . Cornect	481 Umhus/C	to an	an the Line Mark And the come
Tubidity: Odor: Color: pH: Uncorrected Cond Liquid Temp. (fro	Cleo Mariana (June Cond.)	*C: X: 70 . Cornect	487 Umbus/C		in a straight Light Martin Anthron a three growth a three growth and three

N	d Waste	E 4400 1174 B
Facility/Project Name	Local Grid Location of Well	Well Name
SPICKLER LANDFILL		SIAR
Facility License, Permit or Monitoring Number	Grid Origin Location	Was there yell suplant 131 Wall
	Let Long	α
	SL Plane ft. N,	A. E. Date Well Installed 3114196
Plezometer E 12	Section Location of Waste/Source	mm dd ý ý
Distance Well Is From Waste/Source Boundary	1/4 of 1/4 of Sec T N	
Is Well A Point of Enforcement Std. Application?	Location of Well Relative to Waste/Sour	
Yes No	u 🗆 Upgradient s 🗆 Sidegra	
	d Downgradient n Not Kn	. Cap and lock?
	2	Protective cover pipe:
B. Well casing, top elevation 1	L MSL	a. Inside diameter:
C. Land surface elevation	L MSL	b. Length: _7.
		c. Material: Steel
D. Surface seal, bottomft. MSL or		Other 🗖
12. USCS classification of soil near screen:	A STATE OF THE PARTY OF THE PAR	d. Additional protection?
		If yes, describe:
Bedrock 2		. Surface seal: Bentonite
13. Sieve analysis attached? Yes		Concrete
	~ 1881 1888 \	Other Material between well casing and protective pipe:
14. Drilling method used: Rotary 12. Hollow Stem Auger 12.	1 100 1001	Bantonite
Other 🗆		Amendar space seal
		Other □
15. Drilling fluid used: Water 20 0 2 Air 1		. Annular space seal: a. Grapplar Bentonite
Drilling Mud [] 03 None []		Lbs/gal mud weight Bersonse sand shury
		Lbe/gal mud weight Bentonite shurry
16. Drilling additives used?		1 % Bentonite Bentonite-cement grout L.
Describe		Ft 3 volume added for any of the above
17. Source of water (attach analysis):		How installed: Tremic
. 1		9 6995 Tramis pumped
City of Marshfield		Gosvity 🖪
E. Bentonite seal, top ft. MSL or _) 6 8 6 8 8 9	b. 1/4 in. 23/8 in. 1/2 in. Bentonite paller
E. Bentonite sear, top ir. MSE of _ 2		
F. Fine sand, top ft. MSL or	31.8 ft.	cOther . Fine sand material: Manufacturer, product name & mesh s
		Mauraca Sand Company - 40/60
G. Filter pack, top ft. MSL or	33.9 ft \ \	b. Volume added 1.3 R3 1/2 67
• •		Filter pack material: Manufacturer, product name and mesh
H. Screen joint, top ft. MSL or		Maypaca Sand Company #30
		b. Volume actied / 9 ft 3 2 kays
I. Well bottom ft. MSL or _ 3	8.9 ft.	. Well casing: Flush threaded PVC schedule 40
J. Filter pack, bottom ft. MSL or	294.	Flush threaded PVC schedule 80
J. Filter pack, bottom ft. MSL or). Screen material: PUC.
K. Borehole, bottom ft. MSL or	39.4 ft.	a. Screen type: Factory cut
W. Botchole, bottom	2.7	Continuous slot
L. Borehole, diameter 60 in.		Other 🖸
0.00		b. Manufacturer Timco
M. O.D. well casing 238 in.	\	c. Slot size: 0. 01
The second secon		d Slotted length: _3.
N. I.D. well casing _205 in.	11	l. Backfill material (below filter pack): None 🗷
		Other [
I hereby certify that the information on this		best of my knowledge.
Signature	Firm	How to
Please complete both sides of this form and return to	the empressia DNR office listed at the	top of this form as required by chs. 144, 147 and 160, Wis. S
and ch. NR 141. Wis. Ad. Code. In accordance with	ch. 144. Wis Stats. failure to file this for	m may result in a forfeiture of not less than \$10, nor more th
\$5000 for each day of violation. In accordance with	ch. 147, Wis. Stats., failure to file this for	rm may result in a forfeiture of not more than \$10,000 for each
day of violation. NUIE: Shaded areas are for DNR	ise only. See mistructions for more inform	nation including where the completed form should be sent.

						Job No.	84374×A	
							Thurs	
ject Location		pickle	- (F			_Day Date	3114196	
Client _		र्मातास्य अस्कृद्धा ः	A Townson	re, yang ngang sag sa	Mary Code (Mary 1999)	Weather	2) 14 146	
		100					TO THE PARTY OF TH	
Mileage Expenses _	nger synt -	<u>/78 ी</u> ध	<u>ታል \</u>	Arrive Job	7:00		Total Chargeable	ر در در ر
		10000000000000000000000000000000000000		Travel Tin	ne 4.0	he same	Hours 10.75	
			Mark Control		, _{tr} , is	140		P.L
Summary of T	ecnnical ar	navor Engine	ering Service	s periormed,	including tield	test data, loca	nons, elevators & estimated	reou
			最高的	"一个"			CONTROL STATE	4-
- Repac	Ked 3	Sample	5 with	T.Co. of	Car	PICK	Sp. The second	
- Ch	ecked	lecch.	دغد تحدالا	C 10045	13tem	Opvehor	THE SENON	1
	707 P	٧~٥ ز	nto co	16 CHUN	Tenk	. Tour	& County Euch	clar
on Site		The state of the s	ANN PARKET	No. OF WARRIES	AND AND THE PROPERTY OF THE PARTY OF THE PA	ALGERIA (S. G. C.)	のは、一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一	his i
<u> </u>	chd 1	mells	SISS	1A ad	Collected	Water H	vels. Allegan	
<u> </u>	_ 1 1				T AT			
	Return	- L +0	<u> </u>	y, was to be a fine of	蒙罗森斯 森	Sa Lista de Ares	大型的基础的特别的	3 -
	Section of the	A STATE OF THE STA	到 是不是10年		W. D. Gallery		CONTRACTOR AND	tage.
		THE RESERVE	Harry Wall		A Control of the Control	计算数据	STATE OF THE STATE	7 E
g · V · Strait	基本公司	A 10 10 10 10 10 10 10 10 10 10 10 10 10	MARK TO A	沙門里可以	理教育和学习	部では、	一一公司,这个时间	
1900		:特别和	のの主義の		他 有主要。	A STATE OF THE STATE OF	CONTRACTOR AND	
14.748次海	建设的基	TO SHE	WE THAT	S. J. Profit Milk	和传统和学士		"这个是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一	ž. 13. 11
ing of the state o	海洋海洋	北京中央社会	为某人执行 企业	医水管管理	研究的 指示	2. 基础建筑影片	小的。 表示是不够 不能是 多的。	· .
	ger gerieb	一个人的数	本家的信息的	的对外的强烈	分娩的数		Grand Mark Control of the Control of	
			An admit brook on block	usia water ta da datem la				
and the second	MARKET STATE		是在一个	经生现的特别	建 的。1985年	在 学习	THE PARTY OF THE P	
				na ana	建筑 面影形			
			v Alexandra	W. Tagray M.	建设 以第一年	elikaras pijema	Company of the Compan	
			walled the same of		A CONTRACTOR	enienijaina Siestojaina		
erich er bei der bei d Bei bei bei bei der bei								
ga en interna en in en en en en in en in in en en en en in en								
e ga et tionet etti keesta ka englaga vaista en en en etti en								(*) (*)
								(4)
	uta is Estima			atory Results.				
Field Test Da	uta is Estima			atory Results.				

Route to: Solid Waste Haz. Waste Wastewater Env. Response & Repair Underground Tanks Other ————

Facility/Project Name	County Name		Well Name S/A	D
SPICKLER LANDFILL Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well N	umber DNR We	
Can this well be purged dry? Well development method surged with bailer and bailed	☐ Yes ☑ No	11. Depth to Water (from top of well casing)	Before Development	
surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped	61 62 70	4	b. 31/6195 m m d d y y c. 6:25 p.m.	$\frac{3}{m m} \frac{16}{d} \frac{95}{y}$
compressed air bailed only pumped only pumped slowly	20 10 51 50	12. Sediment in well bottom 13. Water clarity		inches
Other 3. Time spent developing well	65 min.	13. Water clarity	Clear 10 Turbid 2 15 (Describe) Light brown	Clear 1.20 Turbid 25 (Describe)
	41.9 ft. 205 in.		ópaque	_Clondy
6. Volume of water in filter pack and well casing	21.5gal	Fill in if drilling fluid	is were used and well is a	at solid waste facility:
	gal.	14. Total suspended solids		
9. Source of water added	Yes No	15. COD	L	<u>52</u> . <u>O</u> mg/l
10. Analysis performed on water added? (If yes, attach results) 16. Additional comments on development: Borehole diameter 6!	□ Yes □ No			
3 feet stickup.				
Well developed by: Person's Name and Firm		I hereby certify that of my knowledge.	the above information is	rue and correct to the best
Name: George J Boye Firm: STS Consultant		Signature: Print Initials: 6	Trose JB	cyer_
rum: J J Confullant	<i>J</i>	Firm: <u>57</u>	5 Consulta	n tr

STS GEO-ENVIRONMENTAL GROUP 重義認定。行為四級的 FIELD REPORT 84374×A Job No. Spick ler Day murs **Project** Date Location Town of spencer 3/21/96 Weather Client Weter hasusu clear

7:00

Total

Arrive Job

Mileage

Leave Job Chargeable Expenses 7:00 12 Travel Time Hours Summary of Technical and/or Engineering Services performed, Including field test data, locations, elevations & estimated depths. Comple ted 51 SBA SBAR SIAR use 115 installed Cemouina Well volumes Before and Afth Development Forms bre looment AHached SJAR Wes Developed removina *∕*2 ~ We 11 volumes tight Brown or Dein Wells Was producin 52A SIAR Sign lies Development BOZ Store bought Poured Trosak 50m6 rewords F. Cl & logbook and Color 0200 Field Test Data is Estimated Pending Final Laboratory Results. tgw/6/94/apro gray disk

By:

STS Consultants. Ltd.

State of Wisconsin Department of Natural Resources

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste Haz. Waste Wastewater Env. Response & Repair Underground Tanks Other ————

Facility License, Permit or Monitoring Number County Code Wis. Unique Well Number DNR Well Number	Facility/Project Name SPICKIE/	County Name		Well Name S-2	0.0
1. Can this well be purged dry? 2. Well development method surged with bailer and pumped anged with bailer and pumped 61 surged with bailer and pumped 62 surged with block and pumped 62 surged with block and pumped 70 compressed sir bailed only 10 pumped slowly 10 p		County Code	Was Locus Walley	anber DNR W	
2. Well development method surged with baller and bailed surged with block and bailed surged with block and pumped 61 surged with block and pumped 62 surged with block baller and pumped 70 compressed air 20 10 pumped only 10 pumped only 10 pumped only 15 pumped slowly 15 p					****
2. Well development method surged with bales and pumped 61 surged with bales and pumped 62 surged with block and pumped 62 surged with block and pumped 70 compressed is 20 surged with block and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 20 surged with block balled and pumped 70 compressed is 70 compressed 70 compressed is 70 compressed 70 compressed is 70 compres	1. Can this well be purged dry?	Yes 15 No	11 Death to Water	Before Development	After Development
surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block and bailed surged with block and pumped surged with block and pumped surged with block and bailed surged with block and pumped surged with block and bailed surged with block bailed and pumped surged with block and bailed surged with block bailed and pumped surged with block and bailed surged with block bailed and pumped surged with block bailed and surged and well surged and well surged surg	2. Well development method			18.992	22 000
surged with bailer and pumped 61 surged with block and pumped 62 surged with block and pumped 62 surged with block and pumped 62 surged with block bailed and pumped 70 compressed is bailed and pumped 70 compressed is bailed only 10 pumped only 51 pumped only 51 pumped showly 50 Down 75 min. 12. Sediment in well 4. 0 inches bottom 13. Water clarity Clear 10 Turbid 15 Downbe 15. Inside diameter of well 2. 0 inches bottom 2. 0 inches bottom 13. Water clarity Clear 10 Turbid 15. Inside diameter of well 2. 0 inches 2. 0 Ownbe 2. 0 Ownb	surged with bailer and bailed	. 41	well casing)		
surged with block and bailed			1		
surged with block, bailed and pumped compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only control on water added only control on the bailed on the bailed only control on the bailed	<u> </u>		Date	503121196	03,21,90
surged with block, bailed and pumped compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only compressed six cold waster control of the bailed only control on water added only control on the bailed on the bailed only control on the bailed	-	62		mm dd y y	mm dd v
Time C. 12 : 2.0 p.m. 12 : 4.5 p.m. 13 p.m. 12 : 4.5 p.m. 12 : 4.5 p.m. 13 p.m. 12 : 4.5 p.m. 14 : 4.5 p.m. 15 p.m.			l .	· •	
bailed only pumped only pumped only pumped slowly Other 1 51 pumped slowly Other 1 50 3. Time spent developing well 4. Depth of well (from top of well casisng) 5. Inside diameter of well 6. Volume of water in filter pack and well casing 7. Volume of water removed from well 8. Volume of water removed from well 9. Source of water added (if any) 9. Source of water added (if any) 10. Analysis performed on water added? 11. Additional comments on development: Well developed by: Person's Name and Firm Name: 10. Additional comments on development: 11. Development in well 12. Sediment in well 13. Water clarity Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 (Describe) Clear 10 Turbid Pl 15 Turbid Pl 25 Turbid Pl	• • • • • • • • • • • • • • • • • • • •		Time	c. 11:00 pm	12:15
pumped slowly Other 3. Time spent developing well 4. Depth of well (from top of well casising) 5. Inside diameter of well 6. Volume of water in filter pack and well casing 7. Volume of water removed from well 7. Volume of water added (if smy) 9. Source of water added N 1 A 10. Analysis performed on water added? (If yes, attach results) Well developed by: Person's Name and Firm Name: Conception 12. Sediment in well 13. Water clarity Clear 10 Turbid Of 25 (Describe) Clear 12.0 Turbid Of 25 (Describe) Clear 12.0 Turbid Of 25 (Describe) 13. Water clarity Clear 10 Turbid Of 25 (Describe) Clear 12.0 Turbid Of 25 (Describe) 14. Total suspended 15. COD 14. Total suspended 15. COD 14. Total suspended 15. COD 15. COD 16. Analysis performed on water added? (If yes, attach results) Well developed by: Person's Name and Firm Name: STS Name 200. Signature: Firm: Firm: STS Name 200. Signature: Firm: Firm: Firm: Firm: Print Initials: Firm: Firm: Firm: Thereby certify that the above information is true and correct to the bear of my knowledge. Signature: Firm: Thereby certify that the above information is true and correct to the bear of my knowledge. Firm:	<u>-</u>				
bottom Other 3. Water clarity Clear 10 Clear 20 Turbid 225 Clear 20 Turbid 225 Clear 20 Turbid 225 Clear 20 Turbid 225 Clear 20 C	· · · · · · · · · · · · · · · · · · ·		12. Sediment in well		O. Cinche
Other	-		bottom		
3. Time spent developing well 2. Smin. 4. Depth of well (from top of well casing) 3. Depth of well (from top of well casing) 3. Depth of well (from top of well casing) 3. Depth of well (from top of well casing) 4. Depth of wetler in filter pack and well casing 4. Ogal. 7. Volume of water removed from well 4. Ogal. 8. Volume of water added (if any) 9. Source of water added (if any) 9. Source of water added 15. COD 15. COD 16. Additional comments on development: Well developed by: Person's Name and Firm Turbid (2.25 (Describe) Turbid (2.25 (Describe) Fill in if drilling fluids were used and well is at solid waste facility: 14. Total suspended 15. COD 15. COD 16. Additional comments on development: 16. Additional comments on development: Well developed by: Person's Name and Firm Well developed by: Person's Name and Firm Firm: STS **Name and Firm Initials: Print Initials: Firm: Firm: **Firm: **Turbid (2.25 (Describe) Turbid (2.25	* · · · · · · · · · · · · · · · · ·	(COMM)	13. Water clarity	Clear [1] 10	Clear 120
4. Depth of well (from top of well casisng)3 _ 2 . & ft. 5. Inside diameter of well 6. Volume of water in filter pack and well casing4 _ 0 gal. 7. Volume of water removed from well4 _ 0 _ 0 gal. 8. Volume of water added (if any)0 _ 0 _ 0 gal. 9. Source of water added		V		Turbid 🛱 15	
4. Depth of well (from top of well casisng) _3 2 . & ft. 5. Inside diameter of well _2 0 in. 6. Volume of water in filter pack and well casing _4. Qgal. 7. Volume of water removed from well _9. Qgal. 8. Volume of water added (if any) _0. Qgal. 9. Source of water added _14 _14 _15. COD _14 _1 _1mg/1 _33 . Qmg 10. Analysis performed on water added? (if yes, attach results) 10. Additional comments on development: Well developed by: Person's Name and Firm Name:	3. Time spent developing well	75 min.		(Describe)	(Describe)
5. Inside diameter of well 6. Volume of water in filter pack and well casing 7. Volume of water removed from well 8. Volume of water added (if any) 9. Source of water added 10. Analysis performed on water added? (If yes, attach results) Well developed by: Person's Name and Firm Name: Cene Erza Winner policy 11. In if drilling fluids were used and well is at solid waste facility: 12. Qgal. Fill in if drilling fluids were used and well is at solid waste facility: 14. Total suspended 15. COD 19. I mg/l 15. COD 19. I mg/l 10. Analysis performed on water added? (If yes, attach results) Well developed by: Person's Name and Firm Name: Cene Erza Firm:	· — —		1		
6. Volume of water in filter pack and well casing	4. Depth of well (from top of well casising)	<u>0.8</u> ft			
6. Volume of water in filter pack and well casing 4. Qgal. 7. Volume of water removed from well 9. Ogal. 8. Volume of water added (if arry) 9. Source of water added NIA 15. COD 19		~ /			
Casing	5. Inside diameter of well	<u>くいらin.</u>			
Casing	·				
7. Volume of water removed from well 40. Ogal 8. Volume of water added (if any) 0. Ogal 9. Source of water added 114 15. COD 14. I mg/l 33. Omg 10. Analysis performed on water added? Yes 18. No (If yes, attach results) Well developed by: Person's Name and Firm Well developed by: Person's Name and Firm Name: Cene Eczer Firm: STS Mane Policy Fill in if drilling fluids were used and well is at solid waste facility: 14. Total suspended 19. I mg/l 33. Omg 15. COD 19. I mg/l 5. Omg 16. Additional comments on development: I hereby certify that the above information is true and correct to the beof my knowledge. Signance: Print Initials: Firm:	6. Volume of water in filter pack and well	4.			
7. Volume of water removed from well 40.0gal. 8. Volume of water added (if any) 20.0 gal. 9. Source of water added 15. COD 19.1 mg/l 5.0 mg 10. Analysis performed on water added? (If yes, attach results) Well developed by: Person's Name and Firm Well developed by: Person's Name and Firm Name: Cene Ecza Firm: STS Mone (2015) 14. Total suspended 49.1 mg/l 33.0 mg 15. COD 19.1 mg/l 5.0 mg 16. Additional comments on development: I hereby certify that the above information is true and correct to the best of my knowledge. Signanare: Print Initials: Firm:	casing				
8. Volume of water added (if any) 9. Source of water added NIA 15. COD 14. Total suspended 33. O mg 15. COD 15. COD 19. L mg/l 5. O mg 10. Analysis performed on water added? (If yes, attach results) Well developed by: Person's Name and Firm Well developed by: Person's Name and Firm Name: Cene Erzo Firm: STS: Minne Policy Firm: Firm: Firm:			Fill in if drilling fluid		t solid waste facility:
8. Volume of water added (if any)OOgal solids 33.0 9. Source of water added	7. Volume of water removed from well	TO. Ogal		-	23 7
9. Source of water added NIA 15. COD		Δ		43.7 mg/	
10. Analysis performed on water added? (If yes, attach results) 16. Additional comments on development: Well developed by: Person's Name and Firm Well developed by: Person's Name and Firm I hereby certify that the above information is true and correct to the best of my knowledge. Signantre: Print Initials: Firm:	8. Volume of water added (if any)	<u>O</u> . <u>O</u> gal.	- solids	22,0	
(If yes, attach results) 16. Additional comments on development: Well developed by: Person's Name and Firm I hereby certify that the above information is true and correct to the besof my knowledge. Name: Cene Erzar Firm: STS: Minne Polis Firm: Firm:	9. Source of water added	AIA	15. COD	19.1 mg/l	<u>5</u> .0 mg
Name: Gene Erzar Firm: STS: minnerpolis Print Initials: Firm:	(If yes, attach results)	Yes 🗆 No	· • • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	
Firm: STS: minnerpolis Print Initials: Firm:	• •		of my knowledge.	the above information is t	rue and correct to the be
Firm:	_	1	Print Initials:		
	Firm: >15. Minnerpo	31:5			
			Firm:		

State of Wisconsin Department of Natural Resources MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Facility/Project Name	County Name		Well Name S-3A	P
Spickler LF acility License, Permit or Monitoring Number	County Code	Meantemanoring		1) Number
1. Can this well be purged dry?	cs XNo	11. Depth to Water	Before Development	After Development
2. Well development method surged with bailer and bailed	41	(from top of well casing)	16.62n	_16.70f
surged with bailer and pumped surged with block and bailed surged with block and pumped	61 42 62	Date	b 0 3/21/96	03/21/96 mm dd y y
compressed air bailed only	10	1	c. 8:00 pm.	
_	51 50	12. Sediment in well bottom 13. Water clarity	0. <i>Q</i> inches	Clear 0,20
3. Time spent developing well	1 0 min.		Turbid (S)(15 (Describe)	Turbid (21, 25 (Describe)
4. Depth of well (from top of well casising)	2.7fL			
5. Inside diameter of well2.	<u>06</u> in.			
5. Volume of water in filter pack and well casing	4.9gal	Fill in if drilling fluid	s were used and well is a	t solid waste facility
	<u>O</u> . <u>O</u> gal.		878.0mg/l	1
	0.0 gal.	_ solids		
9. Source of water added	JA_	15. COD	1 <u>9</u> . P	<u>21</u> . Qmg
10. Analysis performed on water added? (If yes, attach results)	(cs No	ı		I
16. Additional comments on development:				
Well developed by: Person's Name and Firm		I hereby certify that to of my knowledge.	he above information is t	rue and correct to the be
Name: Gene Erzar		Signature:		
Firm: STS - minneapolis		Print Initials:		

Route to: Solid Waste Haz. Waste Westewater

_	Project Name: Spickle Job No.: 873 89379 XA Location: Tester: Dam Well Number: FB03 Date Sampled: 3/21/96 Previous Well Sampled:
1,	Surface Seal: Damaged Missing:
-	WELL DATA: Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: Free Product Observed: yes/no Thickness: (from Ground Surface) (from TPVC) (from TPVC) (from TPVC) (from TPVC) (in bailer/by I-Probe)
- - - - - - - - - - - - -	PURGING/SAMPLING: Well Purging Calculations: 4 Well Volumes: I(length of water X 0.12)+0.061 X 29.9 For 2" well 10 Well Volumes: I(length of water X 0.12)+0.061 X 74.8 For 2" well Purging Device: Volume Required: Volume Purged: Could Well Bail Dry? yes no
7	Purging — Time Start: Time Ended: Total Time Spent Purging: Decon Method: Cleaned in office/Field Decon Method:
`~ I	
	IN-SITU TESTING: Tubidity: Clear turbid opaque Odor:
,	

	Project Name: Spickle Job No.: 84374xA Location: Spence Tester: Dcm Well Number: SIAR Date Sampled: 3/21/96 Previous Well Sampled:
ſ	GENERAL CONDITIONS:
	Surface Seal: OK Damaged Missing: Protector Pipe: Damaged Missing: Well Cap: Damaged Missing: If Missing Replaced? Temperature:
-[WELL DATA:
	Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: Free Product Observed: MSCOE (from Ground Surface) (from TPVC) (from TPVC) (from TPVC) (in bailer/by I-Probe)
L	mickiness (iii building by 1=F10be)
	Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.06] X 29.9 For 2° well 10 Well Volumes: [(length of water X 0.12)+0.06] X 74.8 For 2° well Purging Device: Purging Device: Disposeble Sampling Device: Disposeble Required: Water Level After: Could Well Bail Dry? (yes) no Purging — Time Start: 15:30 Time Ended: 16:20 Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned in office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned In office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned In office/Field Decon Method: Disposeble Rolling Decon Method: Cleaned In office/Field Decon Method: Decon Met
٢	IN-SITU TESTING:
7	Tubidity: dear turbid opaque Odor: 0rganic Color: 194 Gm Preservatives VOCs- 3-40 m Hell Hron Uncorrected Conductivity: 211 × 10 Water Temp. (from Cond.) 7.5 Comments Samples Collected Preservatives Hell Hron Indicator Parameters I-R NONE 2-C Indicator Parameters 1-R NOOH 3246 Umbos Cm

-	Project Name: Spickle Job No.: 373782x Location: Spence Tester: Dan Well Number: SIA + ns/msD Date Sampled: 3/21/96 Previous Well Sampled:
	GENERAL CONDITIONS:
-	Surface Seal: Protector Pipe: Well Cap: Temperature: Damaged Damaged Missing: Miss
-[WELL DATA:
-	Measuring Device: MSCOPE Stick Up or Down: -,46 (from Ground Surface) Depth to Water: 34.25 (from TPVC) Depth to Bottom: 49.25 (from TPVC) Length of Water: 15 Free Product Observed: yes/60 Thickness: N/A (in bailer/by I-Probe)
_	
	PURGING/SAMPLING:
1	Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.08] X 29.9 For 2° well 10 Well Volumes: [(length of water X 0.12)+0.06] X 74.8 For 2° well
7	Purging Device: Disp Baile Sampling Device: Disp Baile Volume Required: 20 Volume Purged: 20 Water Level After: Could Well Bail Dry? yes no
7	Purging - Time Start: 15:10 Time Ended: 15:40 Total Time Spent Purging: 30 Fin
]	Decon Method: Cleaned in office/Field Decon Method: Dispose 66
	IN-SITU TESTING:
7	Tubidity: Clear turbid opaque Samples Collected Odor: None #/Size Preservatives Color: VOCs- 9-40 m He(
7	pH: C.65 @ 7.4 C Metals— 2—0 HN02 Uncorrected Conductivity: 81 × 10 Indicator Parameters NONE 4—C Water Temp. (from Cond.) 7.3 Indicator Parameters
7	Comments
ļ	

_	Project Name: Spickle Job No.: 8437422 Joan No.: 8434822 Tester: Dum Previous Well Sampled: 3/21/96
	BENERAL CONDITIONS:
	Surface Seal: Protector Pipe: Well Cap: Damaged Damaged Missing: Damaged Missing: Missin
	Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: Free Product Observed: Measuring Device: 17.20 (from Ground Surface) (from TPVC)
-	PURGING/SAMPLING:
, T T T 7	Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.061 X 29.9 For 2" well 10 Well Volumes: [(length of water X 0.12)+0.061 X 74.8 For 2" well Purging Device: Disposable Volume Required: Volume Purged: Water Level After: Could Well Bail Dry? (yes) no Purging — Time Start: 15:00 Time Ended: (5:10) Total Time Spent Purging: 10 ~ 10
İ	Decon Method: Cleaned in office/Field Decon Method: Disposable
_	IN-SITU TESTING:
T	Tubidity: clear turbid opaque Odor:
T	Comments
	VOCS only

-	Project Name: Spicker Job No.: 843482x Location: Spencer Tester: Dem Well Number: 52 Date Sampled: 3/21/96 Previous Well Sampled:
	GENERAL CONDITIONS:
] 	Surface Seal: Protector Pipe: Well Cap: Damaged Missing: Damaged Missing: If Missing Replaced? Clear/Cloudy/Rain
	Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: Free Product Observed: Measuring Device: Yo Yo (from Ground Surface) (from TPVC) (from TPVC) (from TPVC) (from TPVC) (in bailer/by 1-Probe)
L	(iii bailety by 1 110be)
ITTTT	PURGING/SAMPLING: Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.08] X 29.9 For 2" well 10 Well Volumes: [(length of water X 0.12)+0.08] X 74.8 For 2" well Purging Device: Purging Device: Volume Required: Volume Purged: Volume Purged: Could Well Bail Dry? Volume Start: Time Ended: Total Time Spent Purging: Decon Method: Cleaned in office/Field Decon Method: Disposable Visposable
_	
	IN-SITU TESTING:
	Tubidity: clear (turbid) opaque Odor: #/Size Preservatives Color: Brown/Tan VOCs- 3-40 mc Hall pH: 7.07 @ 56 C Metals- 1-6 Haug Uncorrected Conductivity: 230 x 1 Indicator Parameters Water Temp. (from Cond.) 5.8 Indicator Parameters Comments Cocrected Conductivity: 373

	Project Name: Spickw	Job No.:	84374 AA
	Location: Spence	Tester:	Oum
	Well Number: S-2A Previous Well Sampled:	Date Sampled: _	\$ 3/21/96
-			
	GENERAL CONDITIONS:		
	Surface Seal: Damaged	Missing:	I
f	Protector Pipe: OK Damaged	Missing:	
i		Missing: If Missing	Replaced?
	Temperature:	Clear/Cloudy/Rain	
٦	WELL DATA:		
i	Measuring Device: mScope		1
`	Stick Up or Down: -, 40	(from Ground	d Surface)
	Depth to Water:	(from TPVC)	'
•	Depth to Bottom: 23.59 Length of Water: 7.45	(from TPVC)	
7		ss: NA	(in hailan/hailan)
L	Free Product Observed: yes/60 Thickne	ss:	(in bailer/by I—Probe)
1	PURGING/SAMPLING:		
	Well Purging Calculations: 4 Well Volumes: [(leng	th of water X 0.12)+0	0.081 X 29.9 For 2* well
7			0.061 X 74.8 For 2* well
-		~	
	Purging Device: Disposebl Sampling	Device: Piggo	Sab le
1	Volume Required: 15 54 Nors	1 461	
!	Volume Purged: 20 9 10-5 Water Lev	rel After:	
_	Could Well Bail Dry?		
1	Purging - Time Start: 17:30 Time	e Ended: 12:45	
	Total Time Spent Purging:15 mic		
Т	Decon Method: Cleaned in office/Field Deco	on Mathadi Dis	10 Sc b/s
Ì	becon method. Cledned in office/Field become	on wethou.	0.00
_			
Γ	IN-SITU TESTING:		
•	iii ono izoniia.		
Т	Tubidity: clear <u>turbid</u> opaque	Samples Collec	
1	Odor:	A 7777	Size Preservatives
	Color: Brown Tan	VOCs - 3-43 Metals - 1	e 17~03
T	Uncorrected Conductivity: 292 x (Indicator Paran	
	Water Temp. (from Cond.) 8.3	Indicator Paran	
7-	Comments		
	س (۵۱٫۰۹۷	the cone 438	

٠	Project Name: Spicker Location: Spicker Well Number: S-2AR Previous Well Sampled:	Job No.: Tester: Date Sampled:	84374 xA Dm 3/21/96
- [GENERAL CONDITIONS: Surface Seal: OK Damaged	d Missing:	
	WELL DATA: Measuring Device:	(from Groun	,
	Purging Device: Disposable Solve Volume Required: 23 Wo Could Well Bail Dry? yes 10 Purging — Time Start: 12:00	Time Ended: 17:30	0.061 X 74.8 For 2° well
	IN-SITU TESTING: Tubidity: clear turbid opaque Odor:	VOCs- 3-5 Metals- 1- Indicator Para	Preservatives Htl HNos meters NONF2-L meters 1-L NGO

~		5-3	Job No.: Tester: Date Sampled:	84374 xA Dum 3/21/96
_	GENERAL CONDITIONS: Surface Seal: Protector Pipe: Well Cap: Temperature:	Damaged Damaged Damaged Damaged	Missing: Missing: Missing: If Missing Clear/Cloudy/Rain	
	WELL DATA: Measuring Device: Stick Up or Down: Depth to Water:	η Soope N/A 15.78	(from Ground	Surface)
	Depth to Water: Length of Water: Free Product Observe PURGING/SAMPLING:	20.32 4.54	(from TPVC)	(in bailer/by I—Probe)
-	Well Purging Calculati	<u>Disposable</u> Sampli	ength of water X 0.12)+0 ength of water X 0.12)+0	.06] X 74.8 For 2* well
	Volume Purged: Could Well Bail Dry? Purging — Time Star Total Time Spent Pur	3 101000 Water (es) no t: 9'105 rging: 5 ~.		
T -	Decon Method: C	Cleaned in office/Field C	Decon Method:	2 Se 1 C
T	Color:	Cond.)	VOCs- 3-"4 Metals- 1- Indicator Paran Indicator Paran	Preservatives ME HOUT
			368 umhas cm cor	reche Conè

Location Well N		Spencer 5.3A	+ Dope	Te	ob No.: ester: ate Sampled:	843741 DCM 3/21)9	
Surfac Protec Well C	e Seal: tor Pipe: ap: rature:	s: 5 000 000 000 30	Damaged Damaged Damaged	Missin Missin Missin	osection g: g: g: If Missing Cloudy/Rain		
Measu Stick Depth Depth Length	ring Device: Up or Down: to Water: to Bottom: of Water:		NSCOPE NJA 17.80 33.90 16.10	ickness:	(from Ground (from TPVC) (from TPVC)	}	r/by I—Probe)
Purgir Volum Volum Could Purgir Total	NG/SAMPLING: Purging Calcula ng Device: ne Required: ne Purged: Well Bail Dry? ng — Time Sta Time Spent P	10 W Boiled Samp Wate	Clength of Device Level After Time Enc	e:	+0.061 X 74	.9 For 2' well .8 For 2' well	
Tubidi Odor: Color: pH: Uncor	5-53 rected Conduc Temp. (from		opaque 		VOCs- 3-2 Metals- 1- Indicator Para Indicator Para	Size	Preservatives Hel HNOS NONE 2- C 1- L DAO

	Project Name: Spickler Location: Spencer Well Number: 5-3AR Previous Well Sampled:	Job No.: Tester: Date Sampled:	3/21/aC
٢	Previous Well Sampled: GENERAL CONDITIONS:		
	Surface Seal: OR Damaged Protector Pipe: OR Damaged Well Cap: OB Damaged Temperature: 30	Missing: Missing: Missing: If Missing F Clear/Cloudy/Rain	
Д	WELL DATA:	·	
	Measuring Device: MSLOPE Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water:	(from Ground) (from TPVC) (from TPVC)	Surface) (in bailer/by I—Probe)
L			
_	PURGING/SAMPLING:		
	Well Purging Calculations: 4 Well Volumes: [(len 10 Well Volumes:[(len		061 X 29.9 For 2* well 061 X 74.8 For 2* well
- - 	Volume Required:	Dispus	c b C
1	Purging — Time Start: Tir Total Time Spent Purging:		
7	Decon Method: Cleaned in office/Field De	con Method:	oseble.
<u>_</u>	INLESTING		
ı	IN-SITU TESTING:	_	
T	Tubidity: clear (urbid) opaque Odor: Color: PH: Uncorrected Conductivity: Tubidity: opaque O	Samples Collector #/S VOCs- 3- 40 Metals- 1-3 Indicator Param Indicator Param	Preservatives Hr Hr
	Water Temp. (from Cond.)C.\Comments		
Τ		- Indicator Faram	Columny cons

Project Name: Spicku-	Job No.: <u>84374xA</u>	
Location: Spencer	Tester: Dem	_
Well Number: <u>ARZ</u> Previous Well Sampled:	Date Sampled: 3/22/96	_
GENERAL CONDITIONS:		
- Curfosa Carl		
Surface Seal: OF Damaged Protector Pipe: OF Damaged	Missing:	
l Wall o	Missina:	
Temperature: QW Damaged	MISSING: If Missing Replaced?	
70	Clear Cloudy/Rain	
WELL DATA:		
Magazzina Davi		
Measuring Device:		
Stick Up or Down: +2.6 Depth to Water: 18.95	(from Ground Surface)	
Depth to Water: 18.45 Depth to Bottom: 31.00	(from TPVC)	
Length of Water: 12.05	(from TPVC)	
Fron Draduck Ol	ckness: NA (in bailer/by I-P	
)cs/	ckness: NA (in bailer/by I-P	robe
DUDONIO (O A A TOTALIO		
PURGING/SAMPLING:		
Well Purging Calculations: 4 Well Volumes: 1	Monath of water V 0400 and W 22 2	
Well Purging Calculations: 4 Well Volumes: 1	Mengin of water X 0.12)+0.081 X 29.9 For 2*	well
- To well volumes.	((length of water X 0.12)+0.06] X 74.8 For 2°	' well
Purging Device: Baile Same	O 14	
Volume Required: 16 Samp	oling Device: 13ailu	
1 1/2	- Laval ACI	
Ca. 11 W II O II D	Level After:	
Purging - Time Start: 8:00 An	Time Ended: 10:00 An	
Purging - Time Start: 8:00 An Total Time Spent Purging: 2 h	CS Ended: 70.00 AA	
Decon Method: Cleaned in office/Field	Decon Method: 1) 1500Sch6	
IN-SITU TESTING:		
Tubidity: Clear turbid opaque	Samples Collected	
Odor:non	#/Size Preservativ	
Color: Clear) 11,7 ··· ·· · · · · · · · · · · · · · · ·	100
pH: <u>5.83 @ 8.3 °</u> C	VOCs- 3-40 mc Hei	≀es_
1 0 0	Metals- 1へ ガルック	ιes_
Uncorrected Conductivity: 199x	Metals- 」へ カッ・ュ Indicator Parameters NONF 2 -	es —
Uncorrected Conductivity: 199x (Water Temp. (from Cond.) 8.1	Metals Indicator Parameters NONF 2	es e
Uncorrected Conductivity: 199x (Water Temp. (from Cond.) Comments	Metals— Indicator Parameters NONF 2— Indicator Parameters Indicator Parameters	e
Uncorrected Conductivity: 199x (Water Temp. (from Cond.) Comments	Metals- 」へ カッ・ュ Indicator Parameters NONF 2 -	e
Uncorrected Conductivity: 199x (Water Temp. (from Cond.) Comments	Metals— Indicator Parameters NONF 2— Indicator Parameters Indicator Parameters	e

	Project Name: Spickly	Job No.: _	84374 da
	Location: Secner Well Number: S2	Tester: _ Date Sampled: _	3/22/96
	Previous Well Sampled:	Date Sumpled	
Γ	GENERAL CONDITIONS:		
-	Surface Seeds (A)	Manha	
	Surface Seal: OK Damaged Protector Pipe: AB Damaged	Missing: Missing:	
_	Well Can Damaged	Missing: If Missing	Replaced?
ļ	Temperature:	Clear Cloudy/Rain	·
L			
- [WELL DATA:		
ł	Measuring Device:		
_	Stick Up or Down: 40	(from Ground	Surface)
j	Depth to water:	(from IPVC)	·
İ	Depth to Bottom:	(from TPVC)	
-	Length of Water: Free Product Observed: yes no Thick	ness: NA	(in bailer/by I-Probe)
Ĺ	The Freduct observed. Yes/110		(III Ballety by 1 1 10be)
_	PURGING/SAMPLING:		
١	}		
	Well Purging Calculations: 4 Well Volumes: (()	ength of water X 0.12)+0 ength of water X 0.12)+0	0.061 X 29.9 For 2* well 0.061 X 74.8 For 2* well
_	, , , , , , , , , , , , , , , , , , , ,		
١	Purging Device: Disposet Sampli	ng Device: Drse	JSabl
-	Volume Required:	_	
	J	Level After:	
ļ	Could Well Bail Dry? (yes) no	Bails Dig	
-	Burning Time Starts 9'00 Am	Fine Foded: 11736	
1	Purging — Time Start: <u>9:00 Am</u> Total Time Spent Purging: <u>2.5 h</u>	Time Lilded	
_	• •		به عده مح
	Decon Method: Cleaned in office/Field [Decon Method:	y, 3 3 2 3 0 .
- 1			
			 -
ļ			
- 1	IN-SITU TESTING:		
_		Samples Collec	ted.
-	Tubidity: Clear turbid opaque Odor: leachest? U(San; c)	Samples Collec	Size Preservatives
_	Tubidity: Clear turbid opaque Odor: leachest? Organic Color: light Gray	VOCs - 3-4,	Size Preservatives
1	Tubidity: Clear turbid opaque Odor: leachest? USANIC Color: Night Gray pH:	VOCs- 3-4, Metals- 1-4	Size Preservatives HU HU
	Tubidity: Clear turbid opaque Odor: leachest? USAN; C Color: Night Ging pH: C Uncorrected Conductivity: 229 x	VOCs - 3-4,	Size Preservatives HU HU neters NONF 2 -C
	Tubidity: Clear turbid opaque Odor: leachest? U(San; C) Color: Night Ging pH: @ 'C Uncorrected Conductivity: 229 x	VOCs- 3-4, Metals- 1-4 Indicator Parar	Size Preservatives HU HOU neters NONF 2 -C
	Tubidity: Clear turbid opaque Odor: leachest?, Organic Color: light Gray pH: @ 'C Uncorrected Conductivity: 229 x Water Temp. (from Cond.) Comments	VOCs- 3-4, Metals- 1-4 Indicator Parar	Size Preservatives HU HOU neters NONF 2 -C

	Project Name: Spicka Job No.: ON374AA Location: Sona Tester: Dan Sampled: Previous Well Sampled:
	GENERAL CONDITIONS:
-	Surface Seal: Protector Pipe: Well Cap: Temperature: Damaged Damaged Missing: Mi
- - [WELL DATA:
	Measuring Device: Stick Up or Down: Depth to Water: Depth to Bottom: Length of Water: Free Product Observed: yes foo Thickness: Magnetic Surface (from Ground Surface) (from TPVC) (from TPVC) (in bailer/by I-Probe)
Ĺ	
- I	PURGING/SAMPLING:
_	Well Purging Calculations: 4 Well Volumes: [(length of water X 0.12)+0.06] X 29.9 For 2° well 10 Well Volumes: [(length of water X 0.12)+0.06] X 74.8 For 2° well
_	Purging Device: Baile from Sampling Device: Dig Baile Volume Required: 100 Baile 100 grap Water Level After: Could Well Bail Dry? yes no
	Purging — Time Start: \$.55 A Time Ended: 15:30 P Total Time Spent Purging:
	Decon Method: Cleaned in office/Field Decon Method: D, Sp Bow
_	
1	IN-SITU TESTING:
\ -\ -\	Tubidity: clear turbid opaque Odor:
-	

Route to: Solid Waste H	Lez. Waste 🔲 Wastewate	= 🛛 -	
Env. Response & Repair 🔲	Underground Tenks 🖸	Other 🗆	

Facility/Project Name	County Name		Well Name	
Spickle. LF			52AR	
Facility License, Permit or Monitoring Number	County Code	A CONTRACTOR OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF TH	101.840	11 Number
	r be r		Before Development	AA-Davelan-
1. Can this well be purged dry?	res 💢 "No	11. Depth to Water	Before Development	After Development
A STI II I was a second and		(from top of	18.95n	18.94 R
2. Well development method surged with bailer and bailed	41	well casing)		
surged with bailer and pumped	61	-		
surged with block and bailed		Date	103122196	03122196
surged with block and pumped			b <u>03</u> / <u>22</u> / <u>96</u>	mm dd v v
surged with block, bailed and pumped	70	I	· · ·	, ,
	20	Time	c_7:45 pm	10:00 p.m.
•	10	1	_	
pumped only	51	12. Sediment in well		
pumped slowly	50	bottom		
Other		13. Water clarity	Clear 🔲 10	Clear 20
	_ =	1	Turbid 15	Turbid 25
3. Time spent developing well	<u>3 5 min.</u>		(Describe)	(Describe)
2	١ ٥٠	<u> </u>	Turbid	Clear
4. Depth of well (from top of well casising)	<u>)</u> . <u>O</u> ft.			
	0 6 in.			
5. Inside diameter of well	. <u></u>			
6. Volume of water in filter pack and well				
	4.0 gal.			· · · · · · · · · · · · · · · · · · ·
		Fill in if drilling flui	ds were used and well is a	t solid waste facility:
7. Volume of water removed from well	5. Ogal.	•		1
	_	14. Total suspended	225. Omg/l	3_3. Omg/
8. Volume of water added (if any)		_ solids		
·	A		101	60
9. Source of water added	NIA	15. COD		5.0 mg/l
		1		1
	Yes 🗆 No			
(If yes, anach results)				
16 Additional comments on development:	,			
16. Additional comments on development: 2.6	Stickup			
8:00 - 8:30 Surge! Purge re-		-		
8:43- 8:55 removed 10 22110	as Turk	v2		•
9:20-9:30 (emovie 10 sellon	S. Becor	ring clear -		
9:40 - 9:50 lenous 10 juil	ch	er.	•	
		٠١.		
Well developed by: Person's Name and Firm		I hereby certify that	the above information is t	rue and correct to the best
		of my knowledge.		
_		Sienenwe		
Name: Dave Markerz		Signature:	 	
		Print Initials:		
Firm: STS Consultants	<u> </u>		· 	
		Firm:		•

	ORT SECTION OF SECTION	OUP			
•			Job No.	84374xA	
roject	· Spickler	•	Day	F~;	
ocation	Spencer WI		Date	3/22/96	
lient	Weynhaus		Weather	40- clear	
lileag e	· · · · · · · · · · · · · · · · · · ·	Arrive Job	7:30	Total	
xpenses		Leave Job	5: <i>3</i> 0	Chargeable	10
-		Travel Time		Hours	
			· · · · · · · · · · · · · · · · · · ·		
ummary of Teci	nnical and/or Engineering Se	ervices performed, inclu	ding field test data, local	ions, elevations & est	mated dep
			•		
	pred wells SZAR				
rged with	ma pre Bailer.	. An additional	45 gallons w	cre removed a	nd
melane L	KA. 1335 COD	Jampes collect	12 butore az 14+	ter Developmen	
	SA Was Sursud				
allons o	t metr mes la	moved but The	were remaine	& Silti ad Ta	n in Co
	one ad disposab				
Pump ra	te of 1.0-1.5 98	em for Anoron	1 60		
	wes purged dig				
	10. Are 014	304-021 111-3	First 10 Samp		~
Calledle	1 C 1 5 F		3 / 12 51		
	& Samples From:				
	1-R naoH were		itional Samp	le was colle	ctiq
	redinto a 1-		· · · · · · · · · · · · · · · · · · ·	· · · · · ·	
Ph. co.	it at Temp we	re mecsured a	¿ recorded on	Fleit Samplin	9 Sheet
ed in Su	eld log book. OB	Suvalung of co	dur odor & Ter	bidity were	ما كان
TR Cor bud				2	
TR cor but	al & Clark	TCO After	collection		
te cor but	-ples Stored or	I ce After	- collection.		
TR cor but	al & Clark	I ca After	- collection.		
TR cor but	al & Clark	TCE After	- collection.		
TR cor but	al & Clark	Ice After	- collection.		
TR cor but	al & Clark	TCE After	- collection.		
TR cor but	al & Clark	Ice After	- collection.		
TR cor but	al & Clark	TCE After	- collection.		
TR cor but	al & Clark	I ce Afte	- collection.		
te cor but	al & Clark	TCE After	- collection.		
TR cor but	al & Clark	TCE After	- Collection.		
TR cor but	al & Clark	Ice After	- Collection.		
TR Cor bud Sam	ples Stored or		- collection.		
recorted Sam	s Estimated Pending Final L			Vlatedz.	

STS GE FIELD R	O-ENVIRONMENTAL GRO REPORT	UP .	Land Comment	इन
			Job No.	84374xA
roject	Spickly LA		Day	Sat
Location	- Spin cur	ws.	Date	3/23/46
Client	<u> </u>	 	Weather Weather	30.7 610-9
Mileage Expenses		Arrive Job	6:45	Total Chargeable 5.25
	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	Travel Time		Hours
Summary of	or Technical and/or Engineering Ser	vices periormed, inc	cluding field test data, loca	nons, elevations & estimated depths.
7 . 4.	Delivered Sample	5 Fon S	oick b LF	Colletid 3/22/96
Pm.		matison.		A PART THE TOTAL PROPERTY OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF T
_	الراج والمعالج المعالم المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه المناه	n Territoria de espera de la compres	professional section and the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section	1997年 1998年 19
	Returned to ST	S . Francisco Marine	Manager Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of th	2. 2 · 29 · 29 · 3 · 3 · 3 · 3 · 3 · 3 · 3 · 3 · 3 ·
				e 💌 🕒 je je je 🎉 karajaka e 🛒
_		are en la competition de		and the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second o
			ownerst is the second of the second	
		· Turania i i i i i i i i i i i i i i i i i i		Ward of the second of the seco
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			The second second second	
	· 产生2000年期,例如后对各种中心。	对于,我们也不是一个人	网络网络龙龙龙龙龙龙龙龙	
- 1	STREET STATES OF THE			
11	THE REPORT OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE			
	e from the state of the state of the			
				· · · · · · · · · · · · · · · · · · ·
			كالبراث والمناورة والمناولة المناورة والمناورة	
	- Company Andrews (1994年)。 - The Company Andrews (1994年)。 - The Company Andrews (1994年)。			
				
	o translation of the company			(A) (A) (A) (A) (A) (A) (A) (A) (A) (A)
4.14	Committee of the second section of the second		Part Agent September 1988 - September 1981 Part 1981 - Part 1981 - Pa Part 1981 - Part 1981 - Pa	
<u></u>	The second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of th	医口腔 经产业金		Same and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state
	the engine of a resident of the	the solution of the	多种的物质	- Park Town A A A A A A A A A A A A A A A A A A A
			Service Committee	
	医外部 医神经遗传 经股份证券			
	Data is Estimated Pending Final La	boratory Results.	Mega San San San San San San San San San Sa	2
W6/94/qpr	o gray cask		September 1987 to produce the Company	MARKIZ
. *			By: STS Cons	uitants, Ltd.
		•		

STS

В

APPENDIX B

Chain-of-Custody Forms

№ 26856



Contact Person Jane Kether Phone No (414) 359-30300ffice milwarkee Project No. 84374xA PO No. Project Name Spicker LF											Rush Verbal Other	a	Condition Condition 489	COLD Storage W/R-1 4872 Abbrev. S750		
Sample I.D.	Date	Time	Grab	Composite No. of Containers	Sample Type (Water, soil, err, sludge, etc.)	Precentation	ᆀ՝	Sample Sample	eld Da	Special Cond.	Analysi			Smpl Rectromridan (Include Major C Date Entered LIMS #	contaminants)	1476 1476
D-mwaos. usus	312	8:41	٨	17	Water	14	X	_ _	_		Voc Bost,	As, Ba, Cr,	ms,	Fe lead), mar	<u>cur71</u>
D-mw145-0501	3/12	q.40	싀	17	Wester	스	X	\perp	1	4	Napthalere	, phthalate	5 , (Cyanide		
D-MW155 .051				47	Water	*			╀—	-	 		ļ	1		
D-mw 135-0501				12	A Ame 3 A	4	X	-	+-		 					
D-mw 135-25q				-12	water	14	4		┤	╂	 		 			
D. mu 13 D. 0501				17		1			╁	 	 					
0 mw 15 D- 0501		_		7	 	- -			┤-	+			 -	+		
D-mw65-0501 D-mw19D-csy			7	1-		1	7	-	+		1	,				
Collected by:			,ky	<u></u> 12	Date 3/17	219	سار		Time	Anle.	Delivery by: 1	Dunham	Date	3/13/96	Time	<u>e</u> ~
Received by:					Date				Time		Relinquished by		Date		Time	
Received by:					Date				Time		Relinquished by	<i>"</i> :	Date		Time	
Received by: Date Time											Relinquished by	Ţ.	Date		Time	
Received for lab by	Ky	21. 2 Y	De	77.	Date 3-1	4.9	16		Time	85	S Relinquished by	:	Date		Time	
Laboratory Comm	4				•				Yes	□N	o 🗆 N/A					
Final Disposition: Sa	. mpu	7',,	-e	£	- 1309	150	ì	S	ا۲′،د	مرد	3- 40 in	eather Conditions, Precaut	tions, Ha	zards):	$\overline{\Box}$	
For Both (o diffe					7	2-e A		No	COH		
											Ree	& with ice	- LA	2()		

Nº 26857



Phone No. (414) 3 Project No. 8437 Project Name	59-: 4 XA	3030	_ O P	ffice O N	No.	m)/we						□ Rush □ Verbal □ Other	Laboratory Contact Person Phone No Results Due	tacelt			k S
Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soit air, studge, etc.)	< Preservation	Ambient d		d Data	Special Cond.	- 1 ow leve	Request D.M		(Include Ma		minants)
D- mwigs-osui	3/12	15:15	٨		7	Wate	LX					Voc. set	As, Ba, Cr,	mr,	Fe, 1	rac	,
D-mw 195-0599	_		-		1	water	14X				1	mercury	NapThalene	1 121	thala	tes,	Cyani
- mwF801-0501	3/12	16:00	4	_	7	Metz	12/7	-				·	,	ļ	··	·	
D-M O · MWTBOI · QSJI			\sqcup		3	Weh	╁╌┼╴	-	\vdash			Vac BOZI	level Di	<u> </u>			
Collected by:	د ،اک	, W	L	٠,١٤	L	Date 3/12	196	<u> </u>	Ti	me	!	Delivery by:	Doham	Date	3/13/9	٦6	Time
Received by:						Date			Ti	me		Relinquished by:		Date			Time
Received by:						Date			Ti	me		Relinquished by:		Date			Time
Received by:						Date			Ti	me		Relinquished by:		Date			Time
Received for lab by	Lyn	in [\sum_{i}	Ли		Date 3-14	1.96		Ti	me δ	255	Relinquished by:		Date			Time
Laboratory Commo	//			•		ct Upon Re	eipt?			es:	□ No	□ N/A					
Final Disposition:		· · · · · · · · · · · · · · · · · · ·											eather Conditions, Precautions, Hazards):				

№ 26906



Phone No. (414) 3 Project No. 843 Project Name	59- 14 x	303 A	<u>ა</u> ი	ffice O N	∍					 			Laboratory H	r h	nett marks
Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, studge, etc.)	A Preservation	11	PID/FIE	2	I Data	Special Cond.	Analysis Request		Comments on Sample (Include Major Contaminants)
0- RW 2543-0501			+		7	Wester	4	4		\perp	_		Tow level vois, As,	B	cr, MN, fe
0-RW2543-US49					7	Water	4		_	\downarrow		4		th	alene, Phthalates,
D-RW2551-0501				_	17			_	+	4		-(Cyanide condition	ole	Storage WIR-I MS K
20 RWFBOI-056	313	7.15	^	_	ב	Meter	4	* -	- -	4			Acct. # 4	9	
LD-RWTB01-4501			H	\dashv	વ	Woh	H	+	+	4					LMD
			H			<u> </u>	H	╬	+	+			Smpl M	AR_	1 5 1996 <u>'l'</u> mo
			H	\dashv			H	\dashv		+			Date Entered		3-15-96
				寸			\sqcap	+	\top	1			LIMS#		60300521 546
Collected by:	ځ	M	<u>اب</u> مارد (<u>ા</u> વા		Date 3/13	3/9	L		Tin	ne ()	Delivery by: Puhan		Date 3 /14/96 Time An
Received by:			<u></u>			Date				Tin	_ 1		Relinquished by:		Date Time
Received by:						Date				Tin	ne		Relinquished by:		Date Time
Received by:						Date				Tin	ne		Relinquished by:		Date Time
Received for lab by	Lu) <u> </u>	Du	rs.	и_	Date 3-/5	-90	6		Tir	ne c	115	Relinquished by:		Date Time
Laboratory Comme	//				1] Y	es	□ No	□ N/A		
Final Disposition: Qu	υa	5 <i>5</i> 1		m	راح	w7 D							Comments (Weather Conditions, Pr Rec & with ce	ecau	rtions, Hazards): LMO

Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

Nº 26602



•												Specia	l Har	ndling Request		REC	ORD NUMBE	ERT	IHOUGE	1
Contact Person											1			Rush	Laboratory			<u> </u>		·
Phone No. (414) 3.5													_	Verbal	Contact Perso	»п	men r	Marks		
Project No. 84374	1 X B		_ P	10	No						1		_	Other	Phone No					
Project Name		Spi	<u>.</u> k	عا	٠ ر	<u>ř</u>					Ļ	eggespecies		Other	Results Due _		STD			
Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, ar, shidge, etc.)	Preservation	_	PID/F		d Dat	Special Cond.		Analysis	s Request		(I	Comments on S nctude Major Con)
K20-211WM-02	313	8:47	X		7	Water	7	-+					10	n level vac	is, As, B	a . Y	nn, fe	lead,	Mer	CU14
1020-63wm-D.			1		7	wate	7						7	apthalene	e, Phtha	late	SC	anide		7
LD- MW 75-0501					7	Wate	34	$\neg \tau$					1					1		
RD-mw 105-0501	313	9,55	1		17	Wete														
10-mw70-051	3113	11,00	시		7	Wet	4	∡									ļ			
La-mwfBoz-050	3/13	R'.a	X		7	Wet	4	4				<u> </u>								
0-mw+802-05					3	Weter														
												<u> </u>					<u> </u>			
* Sample 1	ead	26	D	-	ar	1265	w	as	1	u	Q	3-1	4.9	6-LMO						
Collected by:	ساك	W.	بلاد	12		Date 3 13	19	6		Ti	me			Delivery by: 7	Junham		Date 3	114/96	Time	Am
Received by:						Date				Ťi	me			Relinquished by:		_	Date		Time	
Received by:						Date		_		Ti	me			Relinquished by:			Date		Time	
Received by:						Date				Ti	me			Relinquished by:			Date		Time	
Received for lab by	Lur	$n \dot{k}$	Эел	n.	.	Date 3-15	-90	6		Ti	me S	2/5		Relinquished by:			Date		Time	
Laboratory Comm	//					ct Upon Red	eipt	?	(٦,	es/) [] N/A						
Final Disposition:											·			Comments (We	eather Conditions.	Precau	rtions, Hazar	ds):		
MM10 L	آدم	ms	<i>a</i>	٠,٠	se		_			-			T							
				-									一十				*			

Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

№ 29426



Collected by: Date Time Relinquished by: Date Time Time Relinquished Time	UGH A
D-53A-0599 3/2 Riss x 7 Water Ax Phthalates, committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee C	nants)
Smo MAR 23 Smo MAR 23 Section Section States A 7 Weeth Ax Date Entered 3-22 Date Entered 3-22 UMS# 60300 T Date Entered 3-22 UMS# 60300 T Date Time Relinquished by: Date Time Received by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: D	GCR Norage WA-1
Collected by: Date 3/21/96 Time Am/m Delivery by: Date Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received for lab by: White Date 3/23/96 Time 10:10 Relinquished by: Date Time Date Time Relinquished by: Date Time Relinquished by: Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Time Date Date Time Date Date Time Date Date Date Date Date Date Date Dat	
Received by: Date Time Relinquished by: Date Time Comments Only: Seals Intact Upon Receipt? Comments (Weather Conditions, Precautions, Hazards);	ime Am
Received for lab by: When Driver Date 3/23/96 Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquished by: Date Time 15:10 Relinquis	me
Laboratory Comments Only: Seals Intact Upon Receipt?	me
Final Disposition: Comments (Weather Conditions, Precautions, Hazards);	me
Final Disposition: Comments (Weather Conditions, Precautions, Hazards);	
Sample 53A-0599- One bottle missing the	Lon Labo

STS Consultants Ltd.

CHAIN OF CUSTODY RECORD

Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

Nº 21128



Contact Person						milwo	_kee			-	Specia	i Hand	lling Re	quest	REC Laboratory	155	Cliff	•
Project No. 84375	1 / 13		_ _ P	01	رov								erbal ther		Phone No			
Sample I.D.		Time		Composite	No. of Containers	Sample Type (Water, soil, ar. shadge, etc.)	A Preservation	mbient	Sample Olam	ld Dai	Special Cond.			Analysis I		Candition		•
RD-SBAR-OSU					3	Water	× ×	1-				_	15.5	, + (10D	Smµ. Rec'a	MAR 231	996 Init
20-53AR-0502 20-52AR-051 20-52AR-052	3/21	יס לל הסו			तान व	West	<i>*</i> × × × × × × × × × × × × × × × × × × ×		2		~		+			Date Enter	6 <u>300</u>	
RD- SIAR-0501 RD-SIAR-0502	321	15:33	1 1		الطاطا	water water	XX	T					士					
PD- S1 -0501	3/21		, ,		3	wate	X 4	 	_				<u>"</u>	lev	e) VUC'S	only	1	
	<u> </u>	W	<u>ا</u> ا	917	2_	Date 3 2	119	6			2n/pm	1.	elivery		Unhan	Date	3/22/9	6 Time ph
Received by:						Date Date		 -		ime ime		+		shed by: shed by:		Date Date		Time Time
Received by:						Date				ime			<u>_</u>	shed by:		Date		Time
Received for lab by	Wille	. دی	Sh	-سعلا	W	Date 3/23	3/96	·			0.10		<u>_</u>	shed by:		Date		Time
Laboratory Comm						•	•			Yes	□ No		N/A					
Final Disposition:															ther Conditions, Precal TCS - 6-00 IAR -0502 -			1 52.44
Distribution: Original and	Green	- Labo	rator	v Y	ellow	- As needed	Pink - Tr	ransp	orter	Gol	denrod	- STS F	Project I					

STS Consultants Lid.

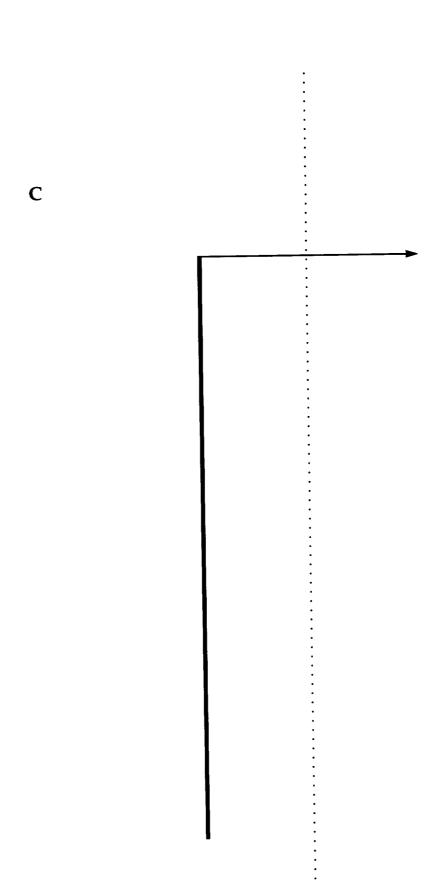
9/94cp10k

CHAIN OF CUSTODY RECORD

№ 29429



Phone No. 414) 359-3030 Office Milwakeae Project No. 84374xA PO No. Project Name Spick & F Sample I.D. Date Time of Spick & F Sample I.D. Date Time of Spick & F Sample I.D. Date Time of Spick & F Sample I.D. Date Time of Spick & F Sample I.D. Date Time of Spick & F Sample I.D. Date Time of Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F Spick & F	Contact Person Jo	ne	Ke	. #1	سرہ							-	Specia 	Handling Request		ES		
Project No. \$43748 PONO. Project Name Spick 2 LF Sample ID. Date Time 2 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,					a 1	m:Iwau	Kag	 2		_			□ Rush			1166	
Project Name Spick 2 LF Sample ID. Date Time g g g g g g g g g g g g g g g g g g g														☐ Verbal	Phone No.	113.3		
Sample ID. Date Time g g g g g g g g g g g g g g g g g g g													e incirci co	Other		STD CONTINUE COLD STREET N/N=1		
SAR-Before 3/22 & 2 Weth XX AR-Overly Mark 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 2 Weth XX SAR-Before 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 & 3/22 &	·	Ì	Time	Grab	Composite	No. of Containers	Sample Type (Water, soit, air, shuge, etc.)	L_			FID		Γ	Analysis F	Request	Smpi (ICA)	Abbrev. STSC mments on Sample , Ade Major Continuants hit	
2AR - Oxylighman 312 North X 2 Weth X 2 Weth X 2 North X			800	V		2	Metr	-11	-					TSS+ COT	0	1		
S2AP-0501 3/17 11-18 7 West 12 10 10 10 10 10 10 10 10 10 10 10 10 10	A 21.					_			_									
S2-050 3Rz S.R. 7 Weth						_		+-+	-							S Ba CR	mr. Fe	
Collected by: Date 3 22 94 Time Pr. Delivery by: Date 3 23 96 Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received for lab by: Aurn Dirry Date 3-23-96 Time 10 10 A Relinquished by: Date Time Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A Final Disposition: Comments (Weather Conditions, Precautions, Hazards): Comments (Weather Conditions, Precautions, Hazards):				_		<u> </u>		+1	_				7			14 1	1 :: 1	
Collected by: Date 3 2 2 9 6 Time P Delivery by: D McM12 Date 3 2 3 9 6 Time A Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Received for lab by: Arm Dirry Date 3 2 3 - 9 6 Time 10 10 A Relinquished by: Date Time Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A Final Disposition: Comments (Weather Conditions, Precautions, Hazards): **Received documents** **Received for lab by: Arm Dirry Date 3 - 2 3 - 9 6 Time 10 10 A Relinquished by: Date Time **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Comments** **Commen		7				7	Met	\Box					7		-31			
Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Comments Only: Seals Intact Upon Receipt? Comments (Weather Conditions, Precautions, Hazards): Comments (Weather Conditions, Precautions, Hazards):		1																
Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received for lab by: Date Time Pate Time Received for lab by: Date Time Time Comments Only: Seals Intact Upon Receipt? Comments (Weather Conditions, Precautions, Hazards): Comments (Weather Conditions, Precautions, Hazards):																		
Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received for lab by: Date Time Received for lab by: Date Time Time Relinquished by: Date Time Comments Only: Seals Intact Upon Receipt? Comments (Weather Conditions, Precautions, Hazards): Comments (Weather Conditions, Precautions, Hazards):		<u> </u>																
Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received by: Date Time Relinquished by: Date Time Relinquished by: Date Time Relinquished by: Date Time Relinquished by: Date Time Received for lab by: Date Time Received for lab by: Date Time Time Relinquished by: Date Time Comments Only: Seals Intact Upon Receipt? Comments (Weather Conditions, Precautions, Hazards): Comments (Weather Conditions, Precautions, Hazards):		<u></u>															**************************************	
Received by: Date Time Relinquished by: Date Time Comments Only: Seals Intact Upon Receipt? Comments (Weather Conditions, Precautions, Hazards): Received by: Date Time Time Comments (Weather Conditions, Precautions, Hazards): Received by: Date Time Time Time Comments (Weather Conditions, Precautions, Hazards): Received by: Date Time	Collected by: Da	<u>wid</u>	W	aka	in		Date 3/2	21	91	<u>6</u>	Ti	me f	~	Delivery by:	Mck112	Date 3 23	3/96 Time Av	
Received by: Date Time Relinquished by: Date Time Received for lab by: Aum Dirry Date 3-23-96 Time / 0 / 0 / A Relinquished by: Date Time Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A Final Disposition: Comments (Weather Conditions, Precautions, Hazards): **Relinquished by: Date Time **Date Time **Comments Only: Date Time **Time / 0 / 0 / A Relinquished by: Date Time **Date Time / 0 / 0 / A Relinquished by: Date Time **Date Time / 0 / 0 / A Relinquished by: Date Time **Date Time / 0 / 0 / A Relinquished by: Date Time / 0 / 0 / A Relinquished by: Date Time / 0 / 0 / 0 / 0 / 0 / 0 / 0 / 0 / 0 /	Received by:						Date				Ti	me		Relinquished by:		Date	Time	
Received for lab by: Augus Direct Date 3-23-96 Time / 0 / 0 A Relinquished by: Date Time Laboratory Comments Only: Seals Intact Upon Receipt? Yes No N/A Final Disposition: Comments (Weather Conditions, Precautions, Hazards): Alc & with ice - Lno	Received by:						Date				Ti	me		Relinquished by:		Date	Time	
Laboratory Comments Only: Seals Intact Upon Receipt?	Received by:						Date				Ti	me		Relinquished by:		Date	Time	
Laboratory Comments Only: Seals Intact Upon Receipt?	Received for lab by	· Lu	m	D	תת	<u>u</u>	Date 3-2.	<u>3-9</u>	6		Ti	me /	010	A Relinquished by:		Date	Time	
Recid with ice - Lmo		Λ.				,						/es	□ No	□ N/A				
	Final Disposition:													Comments (Wea	ther Conditions, Prece	utions, Hazards):		
			·				 							 			·	



1

•

1

1

APPENDIX C

HES Case Narrative



525 SCIENCE DRIVE MADISON, WISCONSIN 53711

HES, Inc.

May 6, 1996

Jane Kettler STS Consultants, LTD 11425 West Lake Park Drive Milwaukee, WI 53224

Dear Ms. Kettler:

Enclosed are the data packages presenting the volatile organic analysis of 17 water samples plus QC, also included is the semivolatile and inorganic analysis of 14 water samples plus QC. Also enclosed are spreadsheets presenting the Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS) results of six water samples. The samples were received on March 15 and 23, 1996 from the Spickler Landfill project. These Sample Delivery Groups (SDG) are designated as: SPK1Q2 and SPK1Q3.

LOW LEVEL VOLATILE ORGANIC ANALYSIS (Low Level 10/92 Contract)

- o <u>Holding Times</u>. All samples were analyzed within the holding time of ten days from sample receipt.
- o <u>Method Blanks</u>. The method blanks analyzed with the samples were within QC specifications.
- GC/MS Tuning. The samples were run under BFB tunes which met all QC criteria.
- o <u>Instrumental Calibrations</u>. The initial and continuing calibrations were within QC criteria.
- o <u>System Monitoring Compounds (SMCs)</u>. All surrogate recoveries were found to be within QC criteria.
- Matrix Spike/Matrix Spike Duplicate. A matrix spike/matrix spike duplicate (MS/MSD) were analyzed for both SDGs. Sample MW10S0501 was designated as the parent sample in SDG SPK1Q2, while sample S1A0501 was designated as the parent sample in SDG SPK1Q3. The CLP SOW spiking compounds were added to the MS/MSDs. The recoveries ranged from 93% to 109% for SDG SPK1Q2, while the recoveries ranged from 101% to 161% for SDG SPK1Q3.

Ms. Kettler May 6, 1996 Page 2

o <u>Laboratory Control Sample</u>. The laboratory control samples (LCS) met all QC criteria with the following exceptions:

SDG SPK1Q2: The LCSs performed on 3/18/96, 3/28/96, and 3/29/96 had the compound vinyl chloride above the upper QC limit of 140% (158%, 146%, and 166%, respectively).

SDG SPK1Q3: The LCS performed on 3/29/96 had the compound vinyl chloride (166%) above the upper QC limit of 140%.

o <u>Internal Standard Recoveries</u>. All internal standard recoveries were found to be within QC criteria with the following exceptions:

SDG SPK1Q3: The internal standard 1,4-dichlorobenzene-d4 fell below the lower QC limit for samples S1A0501DL, S1A0501MS, S1A0501MSD, and S1AR0503DL. The original analyses for the dilutions met QC criteria, but were being reanalyzed due to compounds exceeding the calibration range of the instrument.

o <u>Dilutions</u>.

SDG SPK1Q2: Sample S30501 had total xylenes exceeding the calibration range of the instrument. This is denoted by the use of an 'E' flag on the Form 1. The sample was reanalyzed at a dilution. Both analyses are submitted in the data package.

SDG SPK1Q3: Samples S1A0501 and S1AR0503 each had compounds exceeding the calibration range of the instrument. This is denoted by the use of an 'E' flag on the Form I. Each sample was reanalyzed at a dilution. Both analyses are submitted in each case.

o <u>Data Qualifiers</u>. An 'X' flag was used on many Form Is to denote that a manual quantitation was performed.

SEMIVOLATILE ORGANIC ANALYSIS

Molding Times. All samples were extracted and analyzed within the holding time specified in the CLP SOW, with the following exception:

SDG SPK1Q3: Sample MW13S-0599, from SDG SPK1Q1, required reextraction due to noncompliant surrogates. The sample was reextracted outside the holding time and is submitted with this SDG.

o <u>Method Blanks</u>. The method blanks extracted and analyzed with the samples were within QC specifications.

Ms. Kettler May 6, 1996 Page 3

- o <u>GC/MS Tuning</u>. The samples were run under DFTPP tunes which met all QC criteria.
- Instrumental Calibrations. The initial and continuing calibrations were within QC criteria.
- o <u>Surrogate Recoveries</u>. All surrogate recoveries were found to be within QC criteria.
- o <u>Matrix Spike/Matrix Spike Duplicate</u>. A matrix spike/matrix spike duplicate (MS/MSD) were analyzed for both SDGs. Sample MW10S-0501 was designated as the parent sample for SDG SPK1Q2, while sample S1A-0501 was designated as the parent sample for SDG SPK1Q3. The compounds of concern were added to the MS/MSD. The recoveries ranged from 41% to 97% for SDG SPK1Q2, while the recoveries ranged from 83% to 165% for SDG SPK1Q3.
- o <u>Internal Standard Recoveries</u>. All internal standard recoveries were found to be within QC criteria.

INORGANIC ANALYSIS

- Initial and Continuing Calibration Verification. All calibration verification standards were within QC specifications.
- o <u>Method Blanks</u>. All method blanks were within QC specifications.
- o <u>ICP Interference Check</u>. All ICP interference check samples were within QC specifications.
- o <u>Spike Recovery</u>. All matrix spike recoveries were within QC specifications.
- o <u>Duplicate Analysis</u>. All RPD values for the duplicate analysis were found to be within QC specifications.
- o <u>Laboratory Control</u>. All laboratory control results were within QC specifications.
- o <u>Method of Standard Additions (MSA)</u>. The MSA was not required for these analyses.
- o <u>ICP Serial Dilution</u>. All percent differences (%D) for the serial dilution were within QC specifications with the following exception:

SDG SPK1Q3: The percent difference (%D) for iron (18.6%) exceeded the QC criteria. The Forms 1 and 9 are appropriately 'E' flagged. This represents the possibility of a matrix interference on the determination of this element.

o Analyses Comments.

SDG SPK1Q2: Two lead results were 'W' flagged, indicating that the post-digestion (analytical) spike was recovered outside the 85%-115% range, while the sample absorbance was less than 50% of the spike absorbance.

Please contact either Harley Cliff or Amy Austin if you have any questions regarding the data or require further assistance at (608) 232-3300.

Sincerely,

Amy L. Austin

Supervisor

Quality Assurance

Harley G. Cliff

Supervisor

Mass Spectrometry

cc: Central file

Case file



525 SCIENCE DRIVE MADISON, WISCONSIN 53711

HES, Inc.

April 24, 1996

Jane Kettler STS Consultants, LTD 11425 West Lake Park Drive Milwaukee, WI 53224

Dear Ms. Kettler:

Enclosed are the data packages presenting the volatile organic analysis of 20 water samples plus QC, also included is the semivolatile and inorganic analysis of 18 water samples plus QC. The samples were received on March 14 and 15, 1996 from the Spickler Landfill project. This Sample Delivery Group (SDG) is designated as: SPK1Q1. The remaining results will be sent upon completion.

LOW LEVEL VOLATILE ORGANIC ANALYSIS (Low Level 10/92 Contract)

- o <u>Holding Times</u>. All samples were analyzed within the holding time of ten days from sample receipt.
- o <u>Method Blanks</u>. The method blanks analyzed with the samples were within QC specifications.
- o <u>GC/MS Tuning</u>. The samples were run under BFB tunes which met all QC criteria.
- Instrumental Calibrations. The initial and continuing calibrations were within QC criteria.
- System Monitoring Compounds (SMCs). All surrogate recoveries were found to be within QC criteria.
- o <u>Matrix Spike/Matrix Spike Duplicate</u>. A matrix spike/matrix spike duplicate (MS/MSD) were analyzed for sample RW2551-0501. The CLP SOW spiking compounds were added to the MS/MSD. The recoveries ranged from 96% to 146%.
- <u>Laboratory Control Sample</u>. The laboratory control samples (LCS) met all QC criteria with the following exceptions:

Ms. Kettler April 24, 1996 SDG SPK1Q1 Page 2

The LCS performed on 3/15/96 and 3/18/96 had the compound vinyl chloride above the upper QC limit of 140% (152% and 158%, respectively).

- o <u>Internal Standard Recoveries</u>. All internal standard recoveries were found to be within QC criteria.
- o <u>Dilutions</u>. Samples MW13S0501 and MW13S0599 each had total xylenes exceeding the calibration range of the instrument. This is denoted by the use of an 'E' flag on the Form I. Each sample was reanalyzed at a dilution. Both analyses are submitted in each case.
- Data Qualifiers. An 'X' flag was used on many Form Is to denote that a manual quantitation was performed.

SEMIVOLATILE ORGANIC ANALYSIS

- o <u>Holding Times</u>. All samples were extracted and analyzed within the holding time specified in the CLP SOW.
- o <u>Method Blanks</u>. The method blanks extracted and analyzed with the samples were within QC specifications.
- c <u>GC/MS Tuning</u>. The samples were run under DFTPP tunes which met all QC criteria.
- o <u>Instrumental Calibrations</u>. The initial and continuing calibrations were within QC criteria.
- o <u>Surrogate Recoveries</u>. All surrogate recoveries were found to be within QC criteria with the following exception:

Sample MW13S-0599 had all surrogate recoveries fall below their lower QC limits. The sample is in the process of being re-extracted. The re-extraction will be sent with the remainder of the data. Please see the attached Nonconformance /Corrective Action Report, #433.

- o <u>Matrix Spike/Matrix Spike Duplicate</u>. A matrix spike/matrix spike duplicate (MS/MSD) were analyzed for sample RW2551 0501. The compounds of concern were added to the MS/MSD. The recoveries ranged from 92% to 102%.
- o <u>Internal Standard Recoveries</u>. All internal standard recoveries were found to be within QC criteria.

Ms. Kettler April 24, 1996 SDG SPK1Q1 Page 3

INORGANIC ANALYSIS

- o <u>Initial and Continuing Calibration Verification</u>. All calibration verification standards were within QC specifications.
- o <u>Method Blanks</u>. All method blanks were within QC specifications.
- o <u>ICP Interference Check</u>. All ICP interference check samples were within QC specifications.
- Spike Recovery. All matrix spike recoveries were within QC specifications.
- O <u>Duplicate Analysis</u>. All RPD values for the duplicate analysis were found to be within QC specifications.
- Laboratory Control
 All laboratory control results were within QC specifications.
- Method of Standard Additions (MSA). The MSA was not required for these analyses.
- o <u>ICP Serial Dilution</u>. All percent differences (%D) for the serial dilution were within QC specifications.

Please contact either Harley Cliff or Amy Austin if you have any questions regarding the data or require further assistance at (608) 232-3300.

Sincerely,

Amy L. Austin

Supervisor

Quality Assurance

Men

cc: Central file Case file Harley Cliff

Document # 438

HES, Inc. Nonconformance/Corrective Action Report

DIRECTIONS: Fill in the blanks and check appropriate boxes. Describe the nonconformance. For distribution, follow the flowchart in SOP OP-GEN.35.

Client: 5T5	Submitted By: Tang Ichneider
LIMS Number(s) affected:	Assay Mnemonic: HZWS
60700490	Date Of Occurrence: 4/1 9/96
	Date Initiated: 4/19/96
Describe Nonconformance (Problem):	
All summate recover	'es antide ac limits low
•	
Why Did the Problem Occur: Not Sure	; Chrometyram looks regionally Clean,
So wouldn't the	, rumallyrum looks regularly llean,
think matrix int	terference (all internal ster fine).
	· · · · · · · · · · · · · · · · · · ·
	Signature: Am. A. A.
CORRECTIVE ACTION REQUIRED?	S (fill out back of form) NO
CORRECTIVE ACTION REQUIRED?YE	S (IIII OUT DACK OF TOTAL)
Supervisor Comments:	
perstant, reand	lyge. Lata will be included
with a later 5.	D6.
d) as a	
Signature: H. Clay	Date: 4-22-96
Project Manager Comments: (If Applicable)	Client Notified
Jest mainager comments. (it replicable)	(Date)

Corrective Action

(Side 2)

P 1: Analyst/Supervisor: State wt	hat needs to be done to correct nonconformance and prevent reoccurrence.	•
·		
	. · · · · · · · · · · · · · · · · · · ·	
- • •	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co	
ignature:	Date:	
ORRECTIVE ACTION TAKEN		
ORRECTIVE ACTION TAKEN		
	•	
Corrective Action will be (has been) co	ompleted on:	
Signature:	Date:	
· · · · · · · · · · · · · · · · · · ·		
TEP 2: QA Manager Review. Date	Received in QAU: 4 2496	
Corrective Action AcceptableY	'es NO	
2A Comments:	65110	
Reviewed by:	Wistin Date: 464/96	
QA FOLLOW-UP REPORT (If Applica	able)	
2A Comments:	•	
Signature:	Date:	

" more space is needed.